The Builder.

Vol. LVI. No. 2402. Saturday, March 31, 1889.

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Sanitary Town Houses: some minor details.

THE sanitation of dwelling-houses in town and country, in regard to the most important matters connected with drainage, may now be regarded as having arrived at the dignity of an exact science, the main principles of which are well understood, and in regard to which there is reliable information and advice to be obtained by those who require it. In regard to the mechanical means for achieving the most perfect drainage, taking away from the house everything that should not remain in it, and preventing the access of anything in the way of air-borne pollution which ought not to find its way in, we shall no doubt go on discovering improvements from time to time; but all who have given thought to the subject are pretty well agreed as to the principal objects to be kept in view. Ventilation is as yet far from being an exact science; theory and practice in regard to the best means of attaining it differ widely; but we have at least arrived at a consensus of opinion, among educated persons, that ventilation is a matter of great importance, even in a private house, and that there is a certain barbarity in collecting a large number of people in a comparatively small dining-room and providing no means for changing the air which they are breathing, except by the simple but rather hazardous expedient of throwing open a window. But there are some minor matters in connexion with the construction of town houses, not coming under the generally-accepted definition of sanitation, which nevertheless are very deserving of attention, if houses in crowded towns are to be kept in the most healthy condition attainable.

The distinction which we have in our mind, as between town and country houses, is in relation mainly to the condition of the atmosphere in which they are placed, and to some extent also in regard to the difference of their surroundings in other respects. A house built in the open country may be assumed to be, in the first place, permeated by a pure and healthy atmosphere. It may, from an injudicious choice of site, be subjected to a damp-laden atmosphere; but this is an evil which can be avoided beforehand at all events, if not afterwards. If the site has been well chosen in this respect, there is little fear that the air will bring with it any other ingredients injurious to the health of the inmates. But the air which circulates (provided it has proper opportunities of circulating) through the rooms of a house in a large town is laden with impurities of all kinds which cannot be got rid of or stopped out. Where the air goes, its burden of matter goes with it; and a great deal of this is matter mechanically carried, and which is deposited wherever the current of air is checked, in that visible and tangible form which we call collectively "dust." Moreover, a house on a town site is in most cases much more contracted in regard to space than a house of similar class built in the country. The country house has plenty of space round it for various requirements which in the town house must be provided for indoors, within the limits of certain confining walls. Hence the town house tends to develop many unlit corners, crannies, cupboards &c., where dust and dirt collect, often containing probably putrefying substances, which are left for a long time undisturbed, and assist in rendering the air of the house unwholesome. Every dweller in London, and every one working in a London office, knows that a room cannot be left for a single day without being found coated with dust and soot on every horizontal surface where it can drop and remain. In public buildings the air can be washed and strained before delivery into the building, to some extent at all events; but considerations of cost as well as of space preclude the carrying out of such precautions in most private houses in towns. We have to take our air for the most part as we find it, with all its accompaniments. But as the air is continually depositing part of its load of impurities on the walls, floors, and furniture of the house, it is desirable at all events that what it brings in and leaves in this palpable form should not be allowed to accumulate and create further contamination. Accepting the proverbial saying that dirt is "matter in the wrong place," the object should be to leave it no place which it can thereby make "wrong."

One of the most practical steps towards this end is to leave, in town houses more especially, no places which cannot be daily seen and easily got at. In regard to this object the whole class of erections which are generically known as "casings" are among the most fertile sources of insanitary conditions in town houses. A casing is essentially a superficial shell or incrustation put up in order to hide something which is supposed to be unsightly. What is quite certain is, that wherever such screens are put up, whatever is behind them will very soon be unsightly in the sense of being unfit to be looked at, whether it is actually looked at or not. "Mieux être que paraître," says an old French proverb; a corner full of dust and dirt is no less an evil, but perhaps even a greater, because it is "cased" away out of sight. One of the most important improvements made of late years in connexion with water-closets has been the invention of the form which was first known as the pedestal closet, in which the earthenware basin with its trap is made in one piece, standing openly on the floor with no casing or concealment of any kind. This has come into fairly extensive use; but it ought, in one or other of its forms, to be the one closet admitted into houses. Some of the old-fashioned specifications used to specially demand that the woodwork of these decorous cribs should be screwed so as to be easily removable "when required": but when was it required? Only when repairs to the D-traps and "container" and its appurtenances were imminently necessary. Then the dark recesses were thrown open, not however to be cleansed, only to be screwed up and left to collect a fresh harvest of dirt and decay. In the houses where this kind of dirt-screen has been disestablished, and the open basin substituted, there is still a superstition in favour of casing-up the supply-cistern which modern sanitary science has interposed between the main house-cistern and the watercloset. It is placed on a wooden shelf and a panelled wooden screen fixed in front of it. Let this be done away with. The supply-cistern, or "water waste preventer" (as it is sometimes called) is not an object of beauty, certainly; but it is better to leave it exposed to view, rather than case it up to provide another pocket for the collection of dust. Another ancient and respectable superstition is that the bath must be surrounded with casing, and have a polished baywood or mahogany top fixed round it. Here is another lurking-place, never opened or looked at, for dirt and possible seeds of disease: and for what object? There might be some excuse for concealing the multifarious "cranks and wires" of the old-fashioned water-closet apparatus; but a simple bath, a large receptacle for water, is surely an object which may legitimately be displayed to the naked eye. There is nothing ungainly in it; no pretext

for casing it up in wooden cradles and making believe that it is built of wooden panelling. Even the ordinary japanned iron bath is better shown as it is than hidden in a cupboard of gimcrack joinery. Let it stand out into the room, clear of either wall and with no concealment, so that it can be seen and got at all round, and kept clean and wholesome as it should be. This of course applies still more decidedly to baths of terra-cotta (among the best for those who cannot afford costly materials) and enamelled slate, and other such materials, more suitable than iron inasmuch as they have no paint to wash off and get shabby. Things to be constantly filled with water, and have water splashed about them, should be made of such materials as water will not deface or demolish. What can be more repellent (to the eye) than an iron bath with half the paint washed off the interior? It may not be insanitary, but it looks so, and suggests ideas opposite to cleanliness, which should always be the prevailing suggestion of a bath-room. While on the subject of bath-rooms, let us once more enter a protest against the odious system, still to be met with, of making the water-closet an adjunct of the bath-room. The idea is unworthy of any civilised people. The two things are the very last that should go together. The bath-room should suggest no idea or facts but those of entire cleanness and freedom from all connexion with drainage pollution. Another point of importance is the flooring of the bath-room. Not unfrequently, in houses of ordinary make, the position of the bath-room on the second floor is quite obvious in the state of the plaster ceiling of the drawing-room or some other room on the first floor. The bath-room, if it is honestly used, is a room in which much water is likely to be spilt. It is a common habit to floor it with oilcloth or linoleum on this account; but the water will make its way between this and the skirtings and "casings" of the bath, and fill the joists and the ceiling beneath with water. A bath-room should be made with a cement floor on rolled iron joists, with a slight fall and with a groove at the edge to run off water. It is easy to place movable matting, or wooden grids or cork tablets, for the feet. A wooden-floored bath-room is sure to be a nuisance in the long run. It lets water through, and becomes in itself damp and clammy, and with a rotten odour hanging about it. For similar reasons washstands with wooden tops are to be deprecated. They are never really clean and wholesome after any length of use.

It is important that the cistern (where there is only an intermittent supply) should be so placed that it is easily seen and easily got at, and that everything surrounding it should be capable of being kept clean without any special preparation for the cleansing operation. Cisterns are too generally placed as if the principal object were to forget their existence, unless when once in two years or so they are subject to a cleaning out: many people forget or ignore even that too moderate amount of cleaning. Instead of the cistern being hidden away in a dark hole, with a trap-door for access only to be reached by a ladder which is never forthcoming, it should be placed where a constant eye can be kept upon it, and where all dirt can be carefully removed from its vicinity. It is a question whether pipe casings, even when hinged and screwed, are not snares and traps for dirt; whether it would not be better either to leave them uncased in front, or to cover them only with a mesh of iron wire, which would conceal them to some extent from casual observation, while leaving the chase and the pipes fixed in it open to constant inspection. In a town house, what with decay and dust and possible vermin of various sorts, one never knows what is going on in hollow places of any kind that are concealed from view. The more you can have every surface under the eye and under the scrubbing-brush the better for the sanitary condition of the habitation. And we have not half done yet with the casing-system, which pervades our modern houses everywhere. In one sense sash windows are perhaps the most convenient form of window for opening and shutting that has been invented, at least for crowded houses in towns; some objections which apply to them in towns hardly seem to have force in a country house; there is room there to open a casement window, inward or outward, without knocking anything or anybody down; but you cannot expect this in a town. But the prevalent system of hanging sash windows is decidedly objectionable in a sanitary point of view and in town houses. There you have every window in the house with a system of gimcrack wooden cradling on each side of it, with irregular vacant galleries between it and the brickwork or stonework; supposed, indeed, to be filled up solid with mortar and débris, but how often is this really done, and what is the worth of such filling when it is done? We do not know what goes on in all those cavities; what progress of dry or other kind of rot, what accumulations of decaying rubbish, or what revels of various vermin. Is that the kind of way to build solid and sanitary dwellings for towns whose atmosphere is full of impurities which are carried into every cranny and crevice where air can circulate? We ought to have for our town houses solid-framed windows, with no "boxings and casings," in which all the woodwork is seen and no caverns are concealed behind it. Various ways have been suggested for hanging windows to open sash-wise in such frames, without the unscientific absurdity of lines and weights and pullies; not all of them satisfactory, but it may be fairly argued that the worst of them is preferable to the hollow casing system, as regards sound and wholesome construction. Skirtings, in the way they are usually fixed, come under the category of casings. There is an inherited belief in the beauty of skirtings with large mouldings and considerable projection, and as we cannot afford to have these solid, the lower part is blocked out from the wall to allow room for the "bold" mouldings above: and the space behind becomes a gallery for mice, and a repository for the collection of the products of decay which lie there for generations undisturbed. All these dark and secret places, which we never get at, militate against the healthfulness of a dwelling, besides being architecturally flimsy and false construction. Much better to be content with a solid skirting of slight projection planted close against the wall.

Spaces under stairs are often very ill-looked after. With a desire to utilise part of the space, the stairs are cased up and a door hung, and boxes and all kinds of articles that are wanted out of the way are pushed into this dark cavern, the back of which is never seen from one year's end to another. Spaces like these, if boarded or partitioned up, should always be left with some provision for the access of light, so that they can be seen into at any time without the necessity of bringing a lighted candle on purpose to examine them, which is pretty certain never to be done. Light everywhere is one of the most important conditions of wholesomeness in a dwelling. Corners which are never seen are forgotten, and are not kept clean, because no one sees how much they require it.

In a town house we should deprecate all kinds of ornaments and mouldings which have much undercutting and many hollows in which dust and dirt will lodge. Plaster cornices with large hollow mouldings soon become full of dirt, which is seldom removed because it is not noticed, and the hollows cannot be dusted out from below. The state of things may, however, often be indicated to the eye that will look for it, by a dark line of dirt visible over the lower edge of the hollow moulding, showing how the moulding is coated. An experiment with a step-ladder and a duster would probably surprise the experimenter with the amount of dust he was preserving up there. For a similar reason the rich-looking embossed papers which are so much in favour now are not to be recommended for town houses. The flock ones are the worst, they are regular sponges for dust; but even the smooth-surface papers of this embossed class collect a great deal of dust in their crevices and on the upper sides of their relief ornaments, and are much more difficult to keep properly clean than a smooth paper. Among the worst dust-traps in houses are the larger pieces of furniture, such as wardrobes and high book-cases, which are made with the old fashioned sham cornice round the top, and a flat top several inches below the top of the cornice. This valley on the top of such furniture is in general never cleaned or looked at; owing to its construction it can neither be seen, nor can the dust be brushed off it without turning the whole erection over on its side; it is a place that seems carefully made as a dirt-collector. All furniture should be made with a top unencumbered with any such bulwarks, and so that it can be easily swept as often as is necessary to keep it clean.

It is a question whether wall-papers, one class of which has just been referred to, should be encouraged at all for town houses. The nature of material has nearly as much influence on the cleanliness of a house as shape or construction. It may be said that all papers will hold more dirt than a hard finished and painted plaster surface, unless it be glazed papers, and those are objectionable in most situations on the ground of appearance. Beneath the paper also is the paste with which it is affixed, adding another decaying element. Papering is no doubt a temptingly easy way of producing a decorative effect; but hard-finished and painted plaster and washable "sanitary" paint is a better thing for the sweetness and wholesomeness of the home.

In regard to this portion of the subject, materials, it is a question to be seriously considered whether we do not sacrifice healthfulness to appearance in the upholstering of windows with heavy and voluminous curtains. Most house windows, no doubt, are so treated in internal design as to look unfinished without this drapery, and give more light than is desired. If windows were made rather smaller, and the architrave finished with a cornice of its own, so as to form a complete design in itself, rooms might appear less rich perhaps, but would be more airy and more healthy than with heavy curtains. Colour may be imparted by the employment of stained glass in portions of the windows. It would be necessary also to have shutter-backs worked so as to be presentable in design when the shutters are closed.

Basement floors should be of cement, not of tiles or flags: anything laid with joints is sure to offer chinks some time or another for the entry of the enterprising blackbeetle. We believe it is quite possible, in finishing the basement of a house, to stop out these pests from any possibility of inroad except by walking in through the doors, by thoroughly laid Portland cement floors with a cement skirting joining on to the floor with a rounded angle, so as to leave no actual corner. Corners are weak points; and moreover the rounded-off angle is much more easy to keep thoroughly swept: corners in a basement are difficult to dislodge dust and débris from. Removable cocoanut matting or other similar coverings can be used for the kitchen floor, to prevent the floor being too cold.

The usual construction both of upper floors and roofs is full of drawbacks for town houses. The ordinary floor is a cavern never opened or looked into, between the ceiling and flooring-boards. The habitual adoption of a construction either of iron joists or of steel decking, and concrete, with thick boarding on the top, will conduce to the wholesomeness of the habitation. So would the employment of flat roofs of the fireproof order. The sloping timber roof with a straight ceiling under leaves another of these unexplored caverns, the largest of all, for dirt and vermin to have their own way in. If this class of roof must be used, it is far the best to have it large enough to be entered and used as an attic for storage, instead of leaving it a mere "between-decks" space, unlighted and unexplored. Used as a boarded attic, even a small and low one, it must of necessity be lighted and have easy means of access. It is possible

then that it will be kept clean and wholesome; it is perfectly impossible it can be so when it is only a dark space, unlit and inaccessible.

Non-porous materials, solid construction, no concealed or inaccessible corners, and *light everywhere*—are among the most important conditions for perfectly wholesome and sanitary town dwellings.

RECENT EXCAVATIONS IN THE FORUM OF AUGUSTUS.

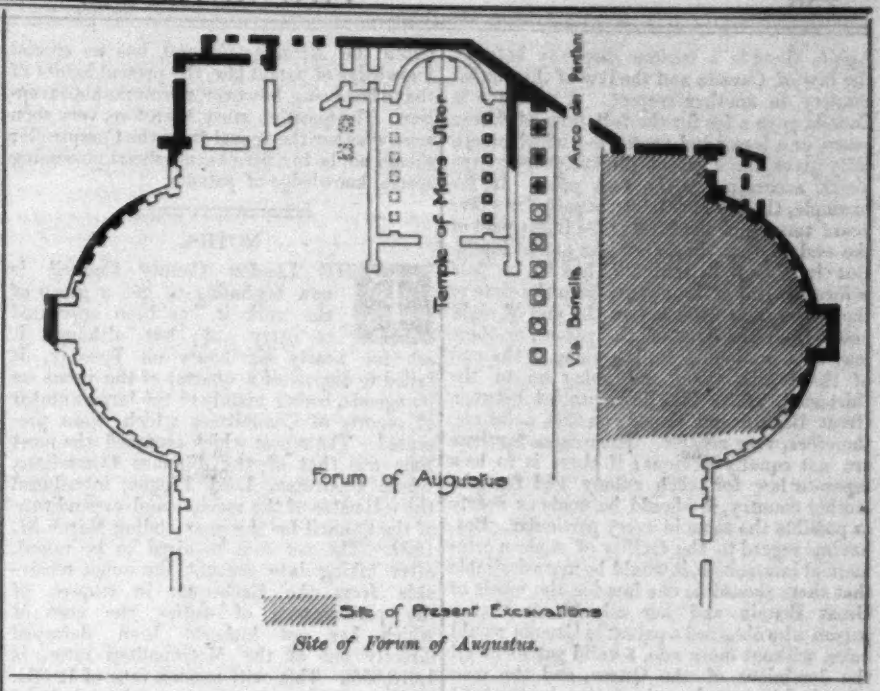
IN the month of February last the Municipality of Rome began the demolition of the small houses, of the granaries, and of the shops supported by the wall of the Forum of Augustus, with the intention of removing that mass of buildings, and of discovering the ancient plan of the Forum, where most probably many interesting relics still exist in the shape of monuments in honour of distinguished Romans.

The area in which the new excavations have been commenced is contiguous at the north with the Via Bonella, and with the temple of Mars Ultor; at the east and south with the semicircle formed by the perimeter wall of the Forum, and at the west with the modern buildings of the Via Bonella. Augustus followed the example of Cæsar, and, in continuation of the Roman forum and Cæsar's forum, built a third one, still more magnificent, named *Forum Augustum*, or afterwards the *Forum Martis*, from the Temple of Mars Ultor, which stood in the middle of it. The reason given by Augustus himself for this work was the absolute insufficiency of the two previous forums for the transaction of business and the administration of justice. The spot where the Forum and the Temple stood was encumbered before with private houses of the Republican period, and the expropriation of a great number of those buildings, besides necessitating a considerable expense, would have been a somewhat high-handed action on the part of Augustus towards his fellow-citizens, as Suetonius, "Aug." 56, says:—"Forum Augustus fecit, non ausus extorquere possessoribus domos," &c. This is confirmed by the irregularity of the boundary wall, which was built so as to conceal the neighbouring buildings, which were so much more offensive to the view, as they were constructed on the rapid slopes of the Quirinal hill.

The wall of the Forum is built with large peperino blocks, united by wooden dowels. The arches of this wall, the large cornice that winds round it, and the ornament by which it is finished above, are built of travertine marble. The Forum was dedicated in 2 B.C., and on this occasion magnificent games and shows took place. The principal monuments that adorned the Forum were, besides the above-mentioned temple, the porticos, the triumphal arches, the *quadrigæ*, and the statues erected in honour of illustrious Romans. The porticoes followed the direction of the perimeter wall, and we learn from the sixteenth century architects that the columns were of different kinds of marble.

The triumphal arches in honour of Germanicus and Drusus were by the side of the Temple of Mars. The monument of Ancyra is the only truthful authority that mentions the *quadrigæ* dedicated to Augustus in his forum.

The present excavations are, as I have said, being executed in the southern semicircle of the Forum. The materials which have filled up the ancient level consist chiefly of mere soil, with a few fragments of old building material. This layer of earth was carried there under the pontificate of Pius V., and in 1570 by the "maestro della strade, Prospero Boccapaduli," in order to drain the waters that filtered through the soil, and those that, descending from the Quirinal and Exquiline hills, formed stagnant pools in this spot. The ancient level of the Forum has been found at the depth of 6 mètres, and the original pavement, composed of various qualities of marble (such as "giallo antico," red and grey granite, "verde antico," porphyry, and serpentine marbles), forming in the whole a geometrical figure, has also been discovered in a perfect state of preservation. At this level, part of a fluted column of "giallo antico" has been found, 4 mètres long, and 1 mètre in diameter, which, I believe, formed part of the internal decoration of the Temple of Mars Ultor. A fragment of the marble cornice of the same temple has also been discovered, besides the base of a marble column. A large Corinthian capital has lately been dug out. It formed part of the outer row of columns belonging to the temple, of which only three are still standing in their places. Beneath the porticoes of the Forum were the honorary pedestals, designed to bear the statues of victorious generals; the number of these pedestals was, I think, very great. Thirty-six of these bases are known positively, having been mentioned by authors; but the number may represent only a fifth, or even a tenth, part of the total.



Site of Forum of Augustus.

One of these bases has been found lately. It is 1·05 mètres high and ·39 mètres in width, and bears the following inscription:—

DIVO NIGRINIANO NEPOTI CARI GEMINIVS FESTVS V . . . . RATIONALIS.

From this inscription we learn that Nigrinianus was the nephew of Carus, who died young, in A.D. 283. Geminius Festus, who dedicated the pedestal, continued to exercise his office of *rationalis* (procurator) under the Emperor Maximianus. It seldom happens that documents of such historical importance as the inscription of Nigrinianus are met with in the urban excavations. Near this pedestal another one was found, ·47 mètres high and ·39 mètres in width, with the following inscription:—

IMP. CAESARI AVGVSTO P.P. HISPANIA VLTERIOR BAETICA QVOD BENEFICIO EIVS ET PERPETVA CVRA PROVINCIA PACATA EST. *ex.* (?) AVRI P. C.

The pedestal must have upheld an object, which Prof. Lanciani, director of these excavations, supposes to have been a beautiful vase, which, as we learn from the inscription, was of solid gold, and weighed one hundred pounds.

A third fragment of an inscription mentioned the career of an *eques Romanus*, who had attained the dignity of governor of Egypt.

These are the discoveries that have lately taken place in the semicircle of the Forum of Augustus, and doubtless when the soil has been completely removed we may expect further important discoveries, both of architectural remains and inscriptions.

I am glad to be able to close the present account with the news that the Roman Municipality is, at present, thinking of buying the nunnery, which was built in the sixteenth century over the northern part of the Forum, and above the Temple of Mars, so as to pull down the said building, and to excavate the entire Forum of Augustus. The remains of the arch, known by the modern name of the "Arco dei Pantani," at the end of via Bonella, are in themselves sufficient to indicate the high class of architectural work which formerly existed on this site. L. B.

PATENTS.

WE recently noticed the publication of a supplement to Carpmael's "Patent Laws of the World,"* and we stated that the parent work and the supplement were each invaluable to persons whose business was connected with patents. But the publication of the supplement is of noticeable importance in another respect, for it seems to show the urgent need for an international code of patent law. Patents are, to a certain extent, international in their character. A piece of mechanism of which a man is the inventor may be of use in all parts of the world, and the inventor requires protection as much in America as in Europe. There already exist statutes and Orders in Council for the purpose of international copyright, though it is obvious that the difference of language and of national characteristics makes copyright in literary works less an international matter than patents for inventions. Again, it is worth while to bear in mind that there now exists an international code of rules for regulating the traffic on the ocean, and it is clear that nations are approaching each other in regard to an international postal system. So it seems to be within reason to desire the promulgation of an international code of patent laws.

Already many of the differences in existing laws are but slight. Take, for example, the term of years for which a patent is in existence. In Great Britain it is fourteen years; in France it is five, ten, or fifteen years; in Germany it is fifteen years, and in the United States it is seventeen years. Thus it will be noticed that there is only three years difference between the highest and the lowest full term. But even if at present the time has not arrived for an international patent law, it is difficult to see why, in theory, there should be differences between the patent laws of the British colonies. In Canada, for example, the term for which a patent can be granted is fifteen years, in New Zealand it is fourteen years.

* "Patent Laws of the World." By A. Carpmael, Solicitor, and R. Carpmael, Patent Agent, London; W. Clowes & Sons. 1889.

Again, there is a curious disparity between the law of Canada and the law of the mother country in another respect. A patentee in Canada pays a fee for the full term of fifteen years, or a lesser and partial fee, which practically gives him a patent for five years or ten years, according to the sum paid. If, for example, the fee of 20 dols. is paid for a five years' term, and the further fee is not paid at the end of that time, then the patent lapses. But in Great Britain 50*l.* has to be paid before the end of four years from the date of the patent, and £100 before the end of eight years from the date of the patent, or there may be a graduated fee beginning at the end of the fourth year, and going on to the thirteenth year. The discrepancies between Great Britain and Canada on this point are, therefore, very notable. The reasons for these are not equally obvious; if there is to be a separate law for each colony and for the mother country, it should be made as nearly as possible the same in every particular. But, having regard to the facility of modern commercial intercourse, it would be more desirable that there should be one law for the whole of Great Britain and her colonies, so that a person who obtained a patent in Canada would have, without more ado, a valid patent in all the dominions of the Queen, and the man who had patented an invention in England would be protected in Australia or in Canada. The issue of a patent in London would be registered not only in England, but in the several registries of the colonies and dependencies of the Crown.

There are also obvious advantages in an international system of patent laws, for it would tend to simplify and make clearer the existing English law on the subject. For example, in this country the person who is entitled to obtain a patent must be in possession of an invention of which he claims to be "the true and first inventor." But there is here no definition of an invention. If we turn to the French law we find that "the following shall be considered as new inventions or discoveries:—"The invention of new industrial products, the invention of new methods, or the new application of known methods for obtaining an industrial result or product." We do not say that this is altogether a satisfactory definition, but at any rate, it gives a person some kind of guide as to the subject-matter of a patent, more especially when read in connexion with Article 3 of the same law. Again, in Germany the law of 1877 definitely states that "patents are granted for new inventions which can be turned to account in trade." It also gives a definition of a non-patentable invention, from which, of course, it is possible to infer what a patentable invention is. Article 2 runs thus:—"An invention is not regarded as new if it has already been described in any printed publication, or publicly used in Germany at the time of application for a patent in accordance with this law, in such a manner that its employment appears possible by other persons skilled in the particular trade to which it relates." The difference between English and German practice is best shown by an example. In England two persons may almost simultaneously have hit upon an invention. Each may claim to be the true and first inventor. Whether the one who may be the latest in making the discovery has described it in a printed publication makes no difference. But in Germany, if the one who seeks to obtain the patent has not previously described the invention in some publication, and the other has done so, then the person who is seeking to obtain the patent cannot obtain it.

It would be impossible within reasonable space to enter at greater length into this subject; but there is one point of some practical interest, viz., that part of the law which makes the Attorney-General, overburdened as he is with official and private practice, a kind of appeal court from the Comptroller. If, for example, the latter requires what is, in the opinion of the applicant for a patent, an unreasonable amendment of the specification, the applicant may appeal to the Attorney-General. Often the Attorney-General has no special knowledge of patent law, the present holder of that office being, however, a remarkable exception. The question must, therefore, very soon arise whether the appeal from the Comptroller should not be to a permanent official possessing special knowledge of patents.

NOTES.

THE London County Council is now beginning to get a grasp of the work it has been appointed to carry out; but although it sat for nearly six hours on Tuesday, it failed to dispose of a quarter of the items on its agenda, owing mainly to the large number of reports of Committees which were presented. The report which occupied the most time was that of the Finance Committee, whose Chairman, Lord Lingen, introduced the estimates of the receipts and expenditure of the Council for the year ending March 31, 1890. The net sum required to be raised, after taking into account the sums receivable from the Exchequer in respect of the performance of duties the cost of which has not hitherto been defrayed directly out of the Metropolitan rates, is 1,618,655*l.* This will mean a rate of 12·53d. in the pound per annum over the whole of London, except the City, which will pay only 10·63d. in the pound,—due to the fact that the City of London bears the cost of its own asylums, industrial schools, coroners, &c. The rate is 4d. in the pound higher than the rate last year, but the abolition of the Coal and Wine Dues is responsible for 2½d. or 3d. in the pound of this increase. The sum required is to be levied on the various parishes in two instalments,—seven-twelfths, or 944,215*l.* 8s. 4d., being called for in the first six months, and the remaining five-twelfths, or 674,439*l.* 11s. 8d., being required in the second six months. This inequality in the amounts payable in the two halves of the year was explained to be due to the fact that the Exchequer contributions will not be paid in to the funds of the County Council until the second half of the year, although the County Council will previously have to meet part of the expenditure in respect of which such contributions are to be made. The inequality of collection is likely to press hardly upon many people, for whereas the rate for the first six months will be 7·31d. in the pound over London at large, and in the City 6·20d. in the pound, in the second half-year the rate will be 5·22d. in the pound outside the City, and 4·43d. within the City. The total rateable value of the County of London is 31,586,561*l.*, or 27,706,948*l.* exclusive of the City. The rateable value of three parishes outside the county of London (viz., Hornsey, South Hornsey, and Beckenham) assessable to the main drainage portion of the London County Council's annual expenditure, is 426,504*l.* We cannot analyse the Council's budget in detail, but there are some items in it which are rather vague,—notably 140,012*l.* "charges transferred from the Counties of Middlesex, Surrey, and Kent," under Section 41 of the Act. This estimate, it is stated, "has been prepared in conference with the Treasurers of the Counties." It cannot be given in detail, and is subject to alteration when the adjustment of account takes place between the Counties of Middlesex, Surrey, and Kent. Another item needing elucidation is that of 13,713*l.*, "costs incurred in the election of County Councillors in January, 1889, by the Returning Officer." There were 118 councillors so elected, so that the Returning Officer's charges amounted to a fraction over 116*l.* per member, or 332*l.* per pair of members in each of the fifty-seven districts outside the City, and 464*l.* for the four members who sit for the City.

THE new rooms on the west side of Westminster Hall are now nearly completed, and it is to be hoped, as Mr. Plunket promised in reply to a question of Mr. Cavendish Bentinck's the other night, that the public will not much longer be shut out of Westminster Hall. Mr. Cavendish Bentinck's question, why the centre staircase to the new rooms was not made opposite the members' door on the east side of the Hall, was perhaps hardly called for. A Gothic hall does not demand the kind of symmetry which the question would imply, and the centre of the range of rooms was undoubtedly practically the best position for the staircase. The appearance of the two staircases, one at the north end and the other in the centre of the west side of the Hall, is to our mind ridiculous, considering the paltry nature of the accommodation to which they give access, and there can be no doubt that the stairs are most injurious to the appearance of the hall, nor is their design and detail such as to make them very interesting objects in themselves. The rooms between the buttresses make pretty rooms enough, and are being finished in a picturesque manner; though the appearance of the flying buttresses coming through the ceiling is even worse and more absurd inside than the external appearance of the buttresses diving into the roof. The centre staircase gives access to a small vestibule out of which the first two "committee-rooms" open right and left; but beyond this the rooms open one out of another, and hence a staircase is necessary also at each end of the hall, to gain access to the end rooms, and prevent the others being really passage-rooms, which in appearance they are still. The formation of these three stairs, two of them of very large proportions, to give access to such a poor set of small rooms, is one of the prominent absurdities of the scheme. It has been pretended that the stairs only represent stairs that were there originally, but this can surely only refer to the stairs of the northern end, and those, in Mediæval times, would be behind a screen. A member of the House who took us over (and who had no architectural "opinions"), observed that they would be very unsuitable as Committee-rooms, but they might form an agreeable and welcome addition to the smoking-room accommodation of the House, if relegated to that purpose. Both in an architectural and in a practical sense the result is an absurdity, a mere archæological whim carried out at inordinate expense and in direct opposition to the true spirit of architecture in the proper sense of the term.

WE are glad to see, from the last number of the "American Journal of Archæology" for December, 1888, that this very deserving periodical has been made the official organ of the American School of Classical Studies at Athens. By this we suppose is meant that the "Transactions" of the School, which have hitherto appeared at very irregular intervals and with prodigious delay, will now cease, and the whole material of the discoveries made by the School will be incorporated in the Journal. This will be a double gain; we shall have one archæological publication the less, and we may hope for a somewhat speedier report of excavations than has hitherto been the case. Further, the "Journal of Archæology" will itself be distinctly a gainer. It has always been noted for full and excellent *résumés* of periodicals and archæological news; but subscribers were beginning to feel that it might with advantage spend a little less space on *résumés* of other people's work, and a little more on original research. In the last issue, for example, out of 137 pages, ninty-four are devoted to *résumés* and news, leaving only forty-three for original articles. As these are devoted to a wide field, which embraces prehistoric art and Mediæval antiquities, it may be imagined the original articles on Classical antiquities were not excessive in length or number. Now it is hoped a new system will be adopted. The *résumés* will be continued, but a series of most interesting original papers are promised. The results of the excavations carried on during the last two years at Thoricus, Sikyon, and Ikaria will appear. Dr. Chas. Waldstein will publish the recently-discovered head of Iris from the Parthenon frieze, which he was the

first to identify; and Dr. Hartwig is to contribute an important article on signed vases. We wish the new coalition every success.

THE number of *L'Architecture* for March 23rd contains an article on "Les Orgues Électro-Pneumatiques," with some illustrations, which we commend to the notice of those sceptical architects who cannot believe that an organ can be conveniently played in modern days by a long movement placing the player at a distance from the instrument. The article is in the first place *apropos* of the installation of the organ or organs in the Church of Ste. Clothilde at Paris. The key-board here is placed in the choir stalls, the pipes above the choir-screen. A further application of the system has just been made in the Church of St. Jacques-du-Haut-Pas, at Paris. Here the organist playing on the key-board of the Choir Organ in the choir can also actuate the two large organs on the tribune, alternately or simultaneously, or the organist placed at the key-board in the tribune can play the organ in the choir. "Il y aurait trois ou quatre claviers et trois ou quatre orgues, au lieu de deux, que l'organiste posséderait, de l'un quelconque des claviers, le moyen de commander à tous les instruments, à sa guise." The electrical power is furnished in this case by eight Lalande batteries, five for the tribune organs and three for the Choir organs. The expense of maintenance is insignificant. The article concludes with the following comment:—

"L'Exposition universelle nous fournira vraisemblablement l'occasion de parler de nouveau des orgues électro-pneumatiques, car il s'y prépare une remarquable installation de ces grandioses instruments.

Les physiciens nous donneront alors l'explication de curieux phénomènes qui nous sont signalés d'attraction, de sympathie, si l'on peut s'exprimer ainsi, se produisant entre les ondes sonores provenant de deux orgues séparés par une assez longue distance et mus simultanément par l'électricité."

AMONG the miscellaneous matters coming up for consideration at the meeting of the London County Council on Tuesday was a recommendation, contained in the report of the Sanitary and Special Purposes Committee, that a Medical Officer of Health for the Metropolis be appointed, at a salary of 1,250*l.* per annum. It was explained that the duties of the officer to be so appointed would be "to inquire into any matter affecting the public health of any district as to which any report is sent to the Council in pursuance of Section 19 of the Local Government Act, and to report thereon;" and to perform such other duties in connexion with the public health of London as the Council might from time to time direct. It was further mentioned that the holder of the office would not be allowed to take private practice; that all fees paid for his services should go into the funds of the County Council; and that he would not be entitled to a pension. After a long discussion, it was decided to make the salary of the office 1,000*l.* per annum instead of 1,250*l.* Mr. William Saunders, Mr. John Burns, and other ardent "economists," talked a great deal of nonsense on this question,—Mr. Saunders remarking that 500*l.* a year was quite enough salary to pay to a man who would only be "a sort of glorified sanitary inspector," and who would have to supervise the work of the sanitary inspectors of the metropolis. Mr. Saunders seems to have read the Local Government Act very imperfectly if he has formed this conception of the *rôle* of a Medical Officer of Health to a County Council, and if he does not perceive that County Councils are intended to pay adequate regard to sanitation. Some members of the late Metropolitan Board of Works, we know, used frequently to defend the Board's remissness in sanitary matters by publicly declaring that the Board was not a Sanitary Authority; but the Board has passed away, and with it, we hope, much of its short-sightedness. Its successors, the County Council, want a skilled hygienist,—a man of initiative and resource,—to advise them on many important matters as to which the late Board had either to call in specialists or to act on the opinion, second-hand as it were, of the officer of some other body; and the sum they have voted for this object is the least that could be offered, if the services of a man really adequate for so important a post are to be secured.

THE collection of miniatures at the Burlington Club is of the highest interest, but it is a mixed interest, by no means artistic purely, or even in the first instance; for if these were the miniature portraits of unknown persons, few would care much to visit the exhibition. The historical interest of seeing so many presumably faithful likenesses of personages well-known in social and political history, within so small a compass, can hardly, however, be exaggerated. The likenesses are probably more trustworthy on the whole than those afforded by easel portraits on the ordinary scale, as they were mostly made as memorials for friends of the person represented, and the first object was fidelity in regard both to features and costume; and the artists who pursued this branch of portrait-painting were people who were mostly content with this realistic view of their art, and were not led astray from actual truthfulness by the desire to produce striking effects. In an artistic point of view the interest of work of this class is of course much more open to question,—most miniatures are as hard as can be in style; those, however, of the best masters of the art show often great power of modelling and of expression on a small scale, and great finish in the painting of accessories. Petitot and Isabey in France, and Samuel Cooper in England, might claim to rank among the eminent portrait-painters. The preface to the catalogue quotes a remark of Walpole's that if Cooper's miniatures were magnified to the size of Vandyck's portraits, they would appear as if painted for the larger scale: and one example of Cooper's in the Burlington collection, the portrait of Lady Catharine Howard (No. 2, Case XI.), seated in a blue dress and with her hand on a globe by her side, has really all the sumptuous and grandiose style of a Vandyck, and is exquisitely finished besides. The Club has secured a real curiosity in the ancient miniature credited to the third century (Case III., No. 45) representing a half length of a mother with her child in her arms. The catalogue preface (signed "J. L. P.") says this remarkable example was originally found by Ficoroni in the ruins of Tivoli; it eventually found its way into Walpole's collection, and was bought at a sale at Strawberry Hill by Mr. Wentworth Dilke, in 1842:—

"It consists of two layers of glass cemented together, and the circular border of the glass is entire, so that it does not appear to have been the bottom of a patera, as has been supposed, but to have been complete in itself as a miniature portrait. The lower piece of glass is throughout of a deep blue colour. The upper layer is of the same deep blue, except where we observe a circle of gold near the border and the figures of mother and child. These portions appear to consist of colourless glass. Thus the figures painted on the under surface of this upper layer of glass are seen as we look down on it, and the under layer has preserved the painting from injury, so that it is probably as fresh now as when it came (1,600 years ago) from the hand of the artist."

It was intended that the collection should be arranged chronologically, as we have often said such collections at the Burlington Club ought to be, but the objection of the owners to the breaking up of their collections militated against this: they are therefore grouped according to owners. Among some that we noted as of special interest are "Pamela, Lady Fitzgerald" (Case I., 37), by Maris; "Sir Philip Sidney" (III., 41), no artist's name, a beautifully-executed and most-characteristic head; "Head" ascribed to Holbein (III., 43), and we should say undoubtedly his; the whole collection in Case VIII., French portraits, including works by Isabey and Parent, and a portrait of Isabey himself, and a remarkable portrait of Napoléon in coronation robes; a miniature of the grand head of "Mrs. Siddons" (X., 6); "David Garrick as Kitely" (XIX., 3); an unfinished portrait of "Cromwell," by S. Cooper (XXIII., 1); a profile portrait of Francis I. (Frame 25); one of Napoléon, by Isabey (Frame 26), painted at Berlin, where Isabey was summoned for the purpose, and sent to Josephine (whose own portrait appears several times in the collection); "Sir N. Poynts" (XXIX., 6), attributed to Holbein, a most interesting profile half-length of a face of much character, and a beautifully-painted embroidered costume; and an exquisite little cameo of Napoleon by Morelli (XXXII., 71), artistically one of the most remarkable things in the collection; this was given by Madame Mère to Dr. O'Meara, whose vindication of Napoléon as against Sir Hudson Lowe has just been republished. These are merely a few items from a collection the historical interest of which, at all events, is almost endless.

THE collection of "Water-colour Drawings on the Thames" by Mr. F. G. Coleridge, now on view at the Fine Art Society's rooms in New Bond-street, consists of a series of rather too "pretty" sketches mostly in the neighbourhood of Sonning, with a few about Henley and Wargrave. They form tolerably truthful representations of scenes in that part of the river, but their artistic interest is not very high.

WE have frequently commented on the remissness of Metropolitan parishes in the matter of the provision of public baths and laundries, and we are therefore glad to see that the matter is being taken up by the London County Council, at whose meeting on Tuesday last the following resolution was agreed to, on the motion of Mr. Phillips,—

"That in the opinion of this Council it should be invested with powers to establish public baths and laundries in all parts of London, and that the matter be referred to the Sanitary Committee to consider and report."

Mr. Phillips very rightly said that the neglect of the Metropolitan parishes in this matter was far from creditable, although such opportunity for neglect was afforded by the permissive nature of the Act of 1846. Since that Act was passed, it appears that only twelve or thirteen of the fifty or more parishes of the metropolis have adopted its provisions. The parish of St. Pancras is honourably distinguished in this matter by the possession of two separate sets of baths and washhouses in different parts of the parish; but other equally populous parishes, such as Bethnal Green, Clerkenwell, Shoreditch, and St. George-the-Martyr, Southwark, are without any such aids to health and cleanliness, notwithstanding what seems to be the established fact that under proper management such establishments pay their expenses, or very nearly so. Probably if the whole of these establishments were placed under one control the present expenses of management would be materially reduced, for at present, as was pointed out by Mr. Eccleston Gibb, each parish which has adopted the Act has to have its own set of "Commissioners of Baths," its own Clerk and other officers, its own corporate seal, and other paraphernalia of office, each separate parish adopting the Act thus having to bear separate "establishment" charges which ought to be materially reduced by concentration. The need of public washhouses in populous and poor neighbourhoods was forcibly illustrated by Mr. Phillips when he said that "if you want to find the very lowest depths of human misery, you must go into a one-room tenement on a washing-day."

The Fall of a Building in Great Titchfield-street.—The Carpenters' Company have generously forwarded ten guineas to the general committee, meeting at the Polytechnic Institution, Regent-street, for the relief of the widows and orphans of the men who lost their lives in the Great Titchfield-street disaster. Contributions have also been received from several architects. A list of subscribers will be published shortly. Mr. H. W. Richards is the hon. sec.

FRONT VIEW.

OCEAN FRONT.

American Domestic Architecture.—House at Seabright, New Jersey, U.S.A.—Mr. Bruce Price, Architect.

AMERICAN DOMESTIC ARCHITECTURE.

We give two views and three interior sketches of a house at Seabright, New Jersey, designed by Mr. Bruce Price, architect, of New York. A feature in the exterior design is the introduction of an open loggia in the ground story.

The lower portion of the walls is in Haverstraw brick set in red mortar, with dressings of Carlisle stone. The upper part of walls and the roof are covered with Akron tiles.

The interior is mostly finished in oak and red wood. The hall and dining-room have carved mantel-pieces of Carlisle stone.

CELTIC ORNAMENT ON THE CROSSES OF CORNWALL.

BY MR. ARTHUR G. LANGDON.

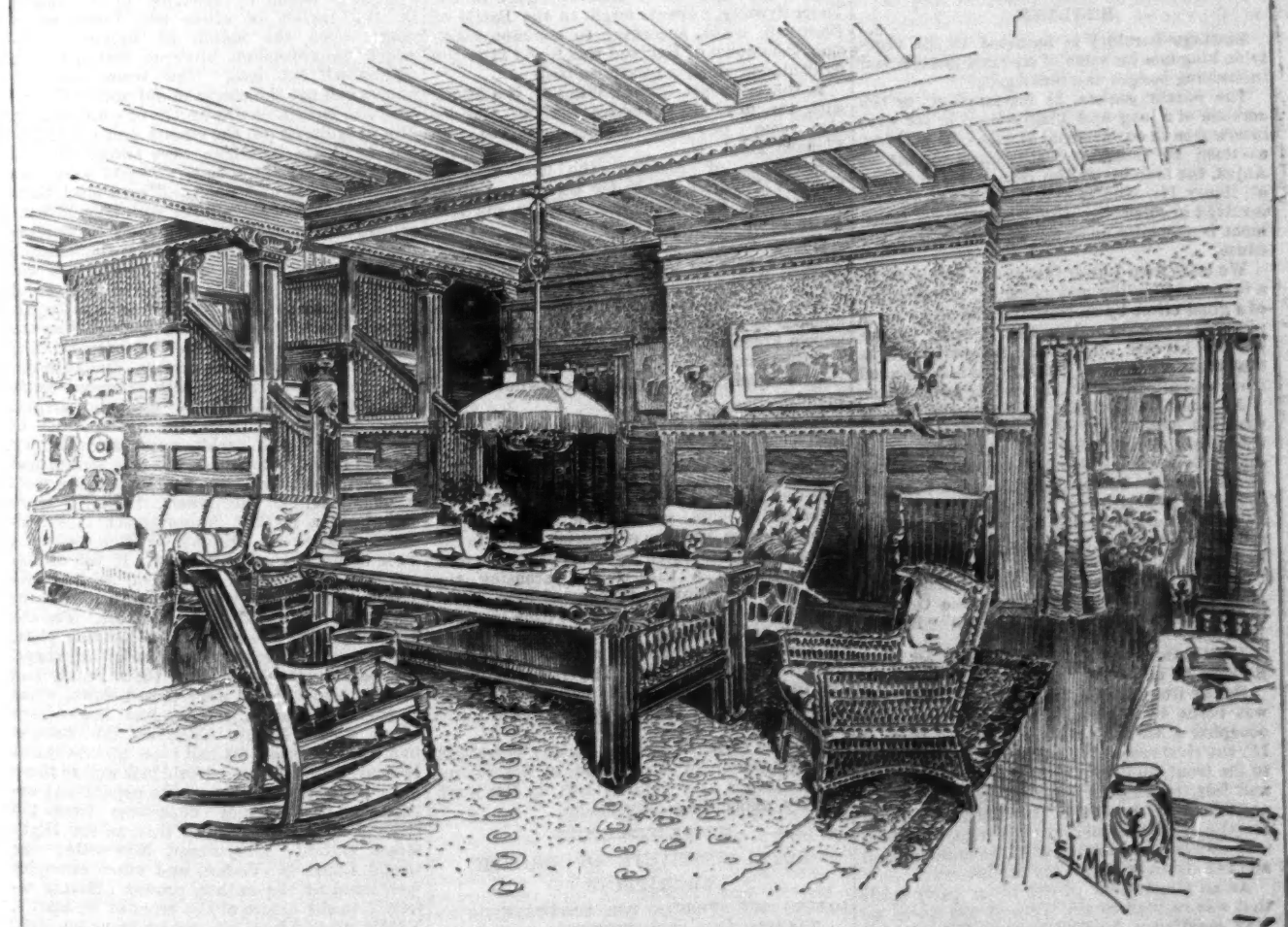
A paper on this subject was read on Wednesday, the 6th inst., at the rooms of the British Archæological Association, being supplementary to a previous paper prepared in conjunction with Mr. J. R. Allen, and read last year, which was illustrated by about 100 pen-and-ink drawings, made by the author to scale.

The first paper, on "The Early Christian Monuments of Cornwall," gave a general account of the crosses and inscribed stones, and showed that there were about thirty inscribed stones, and some 250 crosses of different varieties, and concluded with lists giving the "geographical distribution of the stones," and "classification, arranged according to the form of monument and shape of cross upon it," from the rudest to the most ornate,—a very useful list not previously attempted.

The present paper was accompanied by drawings of all crosses upon which Celtic ornament occurs, all drawn to scale, with the assistance of rubbings photographed.*

* A selection from Mr. Langdon's drawings of these crosses will be found in our lithograph illustrations of this week.

FIREPLACES IN PRINCIPAL SITTING-ROOMS.



HALL AND STAIRCASE.

American Domestic Architecture.—House at Seabright, New Jersey, U.S.A.

In the previously published works containing engravings of these stones, the representations are most inaccurate, and the shapes of the letters on the inscribed stones very misleading. The author's drawings were compared with the engravings in Borlase, Tysons, and Blight, and various glaring errors pointed out in the latter; having thus shown the necessity for reliable drawings and information on the subject, Mr. Langdon said that, having now taken up the subject, he hoped in the course of time he would be able to produce a book on the crosses of his native county, treating the matter more scientifically than his predecessors in the same line of inquiry.

Having given a list of the crosses with Celtic ornaments upon them, he described in detail all those which had inscriptions, viz., Lanherne and Tintagel in mixed minuscules and capitals; Cardynham and St. Cleer in minuscules only; adding, that of all the monuments in Cornwall the cross in Lanherne nunnery was the best-designed and most carefully executed example.

The uninscribed crosses were next taken, and full descriptions of those at Sancreed, St. Columb Major, and Phillack were given. He then proceeded with some general remarks on interlaced work, and, quoting from Mr. Anderson ("Scotland in Early Christian Times"), said, "that this species of ornament is to be found in the works of art of most periods and of most nations." It was remarked that most of the ornament on the Cornish crosses is badly designed and rudely executed; this was accounted for by the intractable nature of the granite with which the workmen had to deal. In support of this view he mentioned that the only cross which exhibited a better quality of art, viz., the cross at Lanherne, unlike the rest of the Cornish

crosses, was made from a more easily-worked material.

The majority of the patterns, he said, were evidently debased copies of those beautiful forms found in Ireland and Scotland, where Celtic ornament was carried to its highest state of perfection. Two of the most typically Celtic forms of ornament were found in Cornwall, viz., interlaced work and key-patterns; but of the true Irish divergent spiral there were no examples, as the scroll-work which occurs on some of the stones appears to be more in common with the foliage in Northumbria.

The author gave, in conclusion, an analysis of the ornament on the crosses, arranged as follows:—(1) Plaits, (2) broken plaits, (3) irregular plaits, (4) irregular broken plaits, (5) debased forms of plait-work, (6) knots occurring in plait-work, (7) ring-patterns, (8) knots, (9) key-patterns, and (10) scrolls. With regard to the above, he remarked that, thanks to a most valuable paper by Mr. J. Romilly Allen on the "Analysis of Celtic Ornament," in the Proc. Soc. Ant. Scot., he was enabled to compare the work of Cornwall with that of other districts in Great Britain.

Such an analysis of the ornamental features of the early sculptured stones, if carried out for every county in England on a similar plan adopted by the author for Cornwall, might be the means of throwing much light on the age of these monuments, a subject upon which there was at present a great divergence of opinion.

THE FLORAL BADGES OF OLD ENGLAND.

ENGLISH heraldry is indebted to the vegetable kingdom for some of its most historic and interesting badges and bearings.

The *planta genista*, or broom-plant, as the emblem of a long and kingly line, is for ever interwoven in our national annals. It was first assumed by Geoffrey Plantagenet, Count of Anjou, the founder of the race and the father of Henry II. The motive for its adoption is involved in some obscurity, but religious sentiment is generally understood to have been the cause.

We learn from Lower that it was first worn as a token of humility and penance, in expiation of a great crime by an ancestor who went on a pilgrimage to Jerusalem with a sprig of the plant in his cap. The same authority tells us that the English family of Broome is descended from this princely stock, according to tradition.

Anderson, in his book on Surnames, records that the assumption of the broom plant was the result of a murder, and that the criminal set out to the Holy Sepulchre accompanied by two servants,—one to lead him by a halter to the place of correction, and the other to strip and whip him there with this tough and pliable rod, which was well suited for the purpose, and to be met with in Palestine.

Louis IX. of France, on his marriage with Margaret of Provence, instituted the Order of the Broom-flower, with the motto "Exultat Humiles."

At Westminster the robe of the effigy of Richard II. is diapered with *Planta Genistas*.

By the irony of fate, this emblem of humility was borne by the proudest house that ever occupied a throne. On the death of Richard II., the rival races of York and Lancaster came to the front, and from thence, "the rose, sweet and fair, is England's chosen tree,"—a flower, according to Armilogia (or the language of arms),—signifying mercy and justice, but which will always be associated with the most tragical and bloodthirsty chapter in our history.

As an illustration of the bitter party spirit that was created by the Wars of the Roses, we may mention a fanciful legend of the Shirley family, who were such firm adherents to the Lancastrian cause that it is said to this day that the white rose never flourishes on their ancestral estate at Ettington, in Warwickshire. The late Mr. Tom Burgess alludes to it in his work on that county, and the story has been told in verse by a celebrated descendant of the ancient house.

It is a disputed point as to when the rose was first used in the heraldry of England. Planché is of opinion that we owe it to Eleanor of Provence, the mother of our Edward I. It is also a question how the red rose came to be adopted by the Lancastrians and the white one by the Yorkists. As a national badge it first appears upon the great seal of Edward IV., who was known as "the Rose of Rouen," from that being the place of his birth, and also on account of his own good looks.

The Yorkist rose is sometimes represented as surrounded with the rays of the sun, and then it is known in heraldic language as a "rose en soleil."

In Tewkesbury Abbey Church lies the last of the Lancastrians, the son of Henry VI. and Margaret of Anjou, with the rose of his race depicted on his tomb. We may just add that Margaret adopted the daisy as a device, and in allusion to her name, and thus the "wee modest crimson-tipped flower" of Burns becomes associated with the Wars of the Roses.

It was no unusual thing for men to change sides during this period, and to change the roses on their shields at the same time. We may instance the Lowers of Sussex as an example.

Cornish families took a prominent part in these conflicts, and this accounts for the many coats of arms from Cornwall being charged with roses.

When Henry VII. ascended the throne the rival flowers were united, and borne red and white combined, and known as the Tudor rose.

The Stuart Kings adopted a rose and thistle, crowned; and afterwards the white rose alone became the emblem of this most unfortunate family.

Thus for fully four centuries has the rose been used as the badge of England, and become inseparably connected with our national life. Even as the sign of a public-house "The Rose and Crown" holds its own.

The hawthorn bush, another badge of the Tudor dynasty, owes its origin to the Battle of Bosworth, when, according to common tradition, the Crown of England was found after the fight hidden under a hawthorn bush.

In the Somerset Chapel, Windsor, is a falcon with the head of a maiden holding a white rose, one of the badges adopted by Richard III.

Katharine of Arragon, the first wife of Henry VIII., used as a badge the pomegranate, burst open, in conjunction with a red and white rose.

Queen Elizabeth's motto, used in connexion with the rose, is *Rosa sine spina*, or a rose without a thorn.

The fleur-de-lys was one of the badges adopted by the Stuarts, but whether this well-known French device represents a flower or not is rather a moot point. Whole books have been written upon it, but the solution has never been found.

Scotia's barbed thistle is said to have been introduced by James III. as the national badge of Scotland in the latter half of the fifteenth century, in allusion to the Royal motto of "In defense"; but another tradition claims for it a much earlier date, going back to the Danes, who, trying to surprise a Scottish camp in the night, were frustrated by one of their men treading upon a thistle, and arousing the defenders by his involuntary cry of pain.

The shamrock of Ireland dates from the fifth century, as the emblem of St. Patrick, who used its three leaves conjoined in illustrating the doctrine of the Trinity. The Irish claim for the badge that it flourishes everywhere, while the rose and the thistle require warmth and sunshine.

The leek (Wales's national badge) is worn in commemoration of a conquest of the Saxons on St. David's Day (March 1st), in the sixth century, under King Cadwallader.

ROYAL INSTITUTE OF BRITISH ARCHITECTS:

LAYING OUT STREETS FOR CONVENIENCE OF TRAFFIC AND ARCHITECTURAL EFFECT.

THE eighth ordinary meeting of the Royal Institute of British Architects for the present session was held on Monday evening last, Mr. Alfred Waterhouse, R.A. (President), in the chair.

The Examination in Architecture.

Mr. W. H. White (Secretary) announced that at an Examination held during the week commencing Feb. 25, 1889, and at an Examination held during the week commencing the 18th inst., 51 candidates had passed, and were qualified to become candidates for the Associateship, viz.:—Francis Baugh Andrews (Birmingham), Thomas Dinham Atkinson (Cambridge), John Reginald Best, David Bird (Sale, Cheshire), Arthur Body (Plymouth), James Barritt Broadbent (Manchester), Allen Ovenden Collard, Charles Herbert Cooper, Egbert Augustine Crooke (Crewe), Robert Edmund Crossland, Reginald Alwyn Crowley (Alton, Hants), Edward Guy Dawber (Moreton-in-Marsh), Langton Dennis, Frederick William Dorman (Northampton), Frank Minshull Elgood, Thomas Bradford Ellison, Sydney Macefield Fairlie (Manchester), Banister Flight Fletcher, Percy Christian Gibbs, Henry Langton Goddard, B.A. Oxon (Leicester), Edgar Augustine Hawkins, Robert Henry (Horsforth, near Leeds), Thomas Rowland Hooper, Edward William Hudson, Herbert George Ibberson, Arthur Spottiswood Jones, George Kenyon, Henry Francis Kerr (Edinburgh), Herbert John Philip Kimpton, Robert Falconer Macdonald, George Orrell (Chorley), Francis Fitzadelm Persse (Loughrea, Ireland), Herbert Read, Henry Ross (Accrington), Frederick Moore Simpson, Ravenscroft Elsey Smith, Bertram Norman Southall, John Clark Strausom, William Henry Stucké, Walter John Tapper, Frederick Henry Tulloch, Frank Thomas Verity, Samuel Edward Wall, Richard Henry Weymouth, Herbert Lingard Whitley, Edgar Thomas Ainger Wigram, B.A. Cantab., Arthur Needham Wilson, Edmund Walter Wimperis, Gilbert Wood (Portsmouth), Benjamin Woollard, and Lawrence Youngs.

The President said that it was very gratifying to have so long a list of gentlemen who had passed the Examination (applause).

Mr. J. J. Stevenson, F.S.A., then read a paper entitled, "The Planning of Streets for Convenience and Architectural Effect." Mr. Stevenson began by referring to the change in the aspect of cities and towns consequent upon the march of improvement,—which improvement, however, had not been gained without loss. New towns and new streets had not the charm of old ones. Whether that was inevitable was worthy of consideration. The irregularity of the streets and the individuality of the buildings were two of the chief attractions in old towns. Streets were now widened and straightened; all were much alike, their sides flat straight walls with holes in them, around which were more or less trimmings; uniformity was the rule. In Baron Haussmann's improvements in Paris the dominant idea was the straight line. Paris was easier to go about in, and cleaner; but its interest was largely gone. It was the same in Rome. In Florence and Cairo the picturesque was degenerating into the dreary commonplace. In Australia and America the new wealth produced costly and handsome buildings, but rarely any artistic street views. At home the old tradition of picturesque street architecture survived and showed new development, but the streets had lost their old charm. Some of the causes were irremediable. Of late years, however, there had been a marked improvement in British street architecture,—the houses often possessing an individuality of their own. It was useless any one advocating the revival of the old system of styles, which should rather be developed and fitted to modern use. For the sake of making streets straight, building plots, which were best rectangular, were left any shape. Old buildings, valuable for their beauty and historic associations, were pulled down, when a slight alteration of the line might have saved them. Nature abhorred the straight line, and wherever art had been highest it had been avoided. Streets should look well to those using them, not merely on the paper plan; experience proved that departures from the straight line best attained this, as the High-street, Oxford; Grey-street, Newcastle; the Grand Canal of Venice, and other examples mentioned by the author, proved. Having referred to the charm of the front of St. Mark's, Venice, arising from the centre being set back, which the restorers were destroying by rebuilding the whole front on a straight line, Mr. Stevenson dealt with the reasons urged for and against making a street straight. It had been the idea of Imperial Rome; but the Roman spirit had not been artistic. Grandeur and admirable organisation characterised Roman rule, but also a singular defect of artistic development. The author then passed to the consideration of modern street planning as exhibited in the latest improvements, especially referring to those at Charing-cross, Piccadilly-circus, and Hyde Park-corner, which he condemned as inartistic, and which did not conduce to the convenience of traffic. The plan suggested by the Council of the Royal Institute was better in every way than the one carried out at Hyde Park-corner. The convenience of foot-passengers ought to be

the first consideration. The defects of the three above-mentioned improvements were dealt with in detail, the principles which appear to have guided the designers being stated, together with reasons for their being deemed erroneous. The working of Building Acts was shown to be another cause of the dull uniformity of modern towns, the limits prescribed by them becoming the rule. Restrictions should be as few as possible, and be limited to sanitation, safety, and sound building, and not trench on the art of architecture, which should have room for free expression and development. Examples were adduced in support of this opinion. The prohibition in Building Acts of projections beyond the wall surface or building line was one of the main causes of the monotony of streets, and should be removed, although the amount of surface projecting, and the extent forward of the projection, must necessarily be limited. A limit of 4 ft. for the latter would give all the freedom an architect needed. The portico of Hanover Chapel, Regent-street, gave the street an element of ancient grandeur, as did the portico of the theatre in Grey-street, Newcastle. Some restriction was necessary as to the heights of buildings. The existing restriction in the right of ancient lights acted, however, in a haphazard manner, and was not in force in France or Scotland. The question of its abolition was referred to by the author, who considered that injustice might be stopped for the future by a simple proviso that, when not already acquired, no rights of ancient lights should subsequently arise. A tower or spire might be carried higher without harm,—an absolute limit was therefore unadvisable, and tended to dead monotony. A restriction was needed which, while keeping down the general height, would allow portions to rise in the air, giving breaks and variety in the sky-line. The present laws produced in many places endless rows of mean, low houses, void of architectural beauty or interest, while there being nothing to cause circulation of the air, it became stagnant; this mode of building, therefore, was not healthy. The provision of the Building Act referring to a space at the rear of each building was commented upon as so drawn as to produce absurd results, and Mr. Stevenson considered it was not needed that all new streets should be required to be constructed for carriage traffic. The freedom and convenience of traffic was a fundamental public right which ought to be secured when vacant land was built upon. In London it had been singularly neglected, the Strand and Oxford-street being the only two continuous routes from the City westwards. Streets which, though open to traffic, led nowhere and were out of the line of it, were useless for general traffic. General power to run continuous routes for traffic across different estates which lie in the necessary line was needed, not despotic power over isolated estates. Proper provision being made of continuous streets for necessary lines of traffic, it was not necessary to make all other streets open to carriage traffic. The disposition in reformers and officials to make people do exactly as they thought right had one drawback: they themselves were not infallible. No restrictions should continue, still less be imposed, which could not show clear necessity and reason. It was the good fortune of architecture in London that the district surveyors, being practising architects first and not mere officials to enforce a law, possessed a higher authority and standing, and also, from their own experience, a wider and more practical view of the requirements of the law, than the official pure and simple. After alluding to the probability of new regulations arising from the institution of the County Councils, and the possible dangers attendant thereon, the author concluded his paper with the opinion that to make towns more interesting and beautiful; to make them a collection of buildings, each with its own individuality, and not mere lines of uniform straight streets without character and without sky-line; and to give a new aim in laying out streets, looking not to the beauty of the plan, which could never be seen actually, but to the effect of the elevations of the buildings, was surely a lustre worth striving for.

The President, in inviting discussion, said that they had been listening to a most opportune paper, coming, as it did, exactly at the time when the questions it dealt with were likely to command much more attention than hitherto, owing to the formation of the County Councils. One of the burning questions of the hour was with respect to street effect, and the talked of loss of St. Mary-le-Strand—a church very dear to many of them. He had hoped Mr. Stevenson would have alluded to that subject, but it seemed, somehow or another, to have escaped his attention. The Council of the Institute had the question under its consideration, and intended to take action in the matter. The church was not only very beautiful in itself, but it had the advantage which few metropolitan buildings had, of being exactly in the right place (applause).

Mr. J. Macvicar Anderson (hon. sec.) said he attended a deputation on the preceding Thursday, along with the representive members of the Reparation Committee of the Church of St. Mary-le-Strand, to the Strand members of the London County Council for the purpose of protesting against any idea of removing the church. The deputation was listened to attentively by Mr. Augustus Harris and Capt. Probyn, and succeeded in eliciting from them the assurance that they had given no pledge in favour of the removal of the church (applause). The deputation further placed before those gentlemen facts in regard to the width of the Strand at various points, and of Fleet-street and other streets, and in reference to the architectural character of the church, which somewhat opened their eyes. For instance, the width of the street opposite the church—and he had paced it at that and other points—was thirteen and eleven paces. Further to the west, opposite the Adelphi Theatre, he found the Strand was ten paces wide, while opposite Bedford-street, Covent-garden, it was only nine paces wide. Opposite Norfolk-street it was eight paces, and in Fleet-street, opposite Anderton's Hotel, it was nine paces wide, so that they had a width opposite the church of thirteen and eleven paces, as against nine and ten paces westwards and eight and nine eastwards, showing beyond all dispute that the argument as to the church being an obstruction to the traffic was absolutely groundless (applause).* The result of the deputation, he believed, was satisfactory, and if backed, as it would immediately be, by a strong letter from the Institute to the London County Council protesting against the removal, he believed it would have still further effect. He took it that the Council of the Institute would have the full sanction of the members in any action they might take in that direction (applause).

Mr. C. Forster Hayward, F.S.A., was pleased to hear what Mr. Anderson had just said because certain newspapers, which seemed to take a Philistine view of things generally, had been very urgent indeed in taking up this question of the removal of the Church of St. Mary-le-Strand. Its position was unique, for, as the President had said, it was exactly where it ought to be. They were all anxious that the Institute should take a position immediately in support of what Mr. Anderson had said, and he was only too glad to hear that the Council were about to move in the matter. In laying out new lines of streets, advantage should be taken of such monuments and architectural features as were worthy to remain, to enhance the beauty of the streets and improve the surroundings; and they should not pull down, disfigure, or destroy the valuable work of their forefathers, with the idea of increasing the value of the adjoining property. In making new streets, they must pass through a certain quantity of property, and in doing so it was seldom they would not come upon something or other worthy of being saved. No doubt there were streets which might be run through bad property, without meeting with anything worth preserving, but in making new streets the principles of which Mr. Stevenson had spoken, of the curved or non-monotonous street and the monotonous or straight street, must be taken together in a town. They could not lay down a rule that a curved street was the best, when occasionally a straight street was preferable. No doubt the traffic in the Strand would be very much improved by a double course of street. He knew an instance in his own town (Colchester) where there was a very fine street, similar, in a small way, to the Strand. This street formerly had a church in the middle, with two lines of traffic passing it. The people, however, got rid of the church, the result being that they had regretted doing so ever since, for, instead of improving and making the street look finer, there was a monotony and want of something in it which they wished to supply to take the place of the church they had been foolish enough to pull down. It would be the same thing if the Church of St. Mary-le-Strand was removed (applause). The principle Mr. Stevenson had advocated, of having occasional differing widths, was extremely desirable to take into account. The Strand, at the end of Wellington-street, was terribly congested with traffic, but if there had been a circus there, or only a semi-circus towards Waterloo Bridge, it would have relieved the traffic very much. Then in a new street—Shaftesbury Avenue—there was a combination of straight lines and curves, which ought to have been more thought out, while, if the street had been differently laid out at the end towards Holborn, they would have had the Church of St. George, Bloomsbury, at the end, which would have had a very desirable effect. Instead of that the street had been simply spoilt because of a public-house and a distillery. Mr. Hayward concluded by moving a hearty vote of thanks to Mr. Stevenson.

Mr. E. C. Robins, F.S.A., inquired whether the Institute would consider the desirability of forming a road on the north side of the church of St. Mary-le-Strand as part of their suggested scheme?

The President replied that that would form part of the scheme.

Mr. Anderson added that the widening of the Strand was not necessary at that point, because the Strand was narrower at other points; but as part of the general improvement of the Strand, the proper way to do so would be to throw back the houses on the north side, leaving the church where it is.

Mr. Ralph Nevill, F.S.A., said that Mr. Stevenson's point as to the advantage of the crookedness of streets should be enforced on the public, who were now of an opposite opinion. Nobody who had observed the great beauty of many of the London streets could fail to recognise that it was greatly owing to their irregularity. For instance, the view coming up Fleet-street, with St. Dunstan's Church and the Law Courts beyond, was, under certain lights, unsurpassed in any European capital. Another good effect was also to be had in Bond-street, while the crooked bit by the church in High-street, Kensington, was very charming, though it had been threatened as being a scandal and disgrace to London. In fact, there were many well-meaning people who thought they were doing a great public duty when they tried to make the picturesque curved streets into nice straight thoroughfares. It was, therefore, most important that the attention of the public should be directed to the fact that a body of men existed, men who were not only artists but men of business, and who thought that some of the irregularities in the lines of the streets were an advantage instead of a drawback. He could not quite follow Mr. Stevenson's remarks as to its not being necessary to have carriage traffic in all roads. It was very nice, no doubt, to have paved by-ways for short cuts, but they could not forget the inconvenience which arose when coals had to be taken in or dust had to be removed. He was sorry to understand from what had been said about the Church of St. Mary-le-Strand that the Council of the Institute did not propose to go a little further. It would be very desirable that the Institute should have the opportunity of offering some advice on the subject of the laying out of streets to the new County Council, who would, no doubt, be very anxious to signalise their reign by carrying out works of permanent utility. The large majority of the Council were pledged to find some means of increasing the accommodation for workmen. Therefore, if the Institute could, as it ought, help them by suggesting means by which they could make great improvements in London, and at the same time meet the claim for providing increased accommodation for the working-classes, they would very much help and strengthen the County Council, who would probably be grateful for any such support (applause). It was very important to bear in mind the extreme undesirability of carrying out such great improvements by little bits, instead of having large schemes, so that the improvements might repay the public and become profitable investments (applause). There was a strong feeling on both political sides that any such schemes should receive more attention than they had done in the past, especially as they had seen the unfor-

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* The fact seems to be, that many people have an exaggerated idea as to the narrowness of the Strand roadway flanking St. Mary's Church, because they compare it with the very wide roadway immediately westward of the church.—ED.

tunate results arrived at in the case of the Piccadilly Circus and the Shaftesbury Avenue arrangements. The great necessity now was a road communicating with the north, starting from near the Law Courts, and this might be attained by pulling down one side of Drury-lane, where the property was of a rubbishy description, and would eventually come down of its own accord. This would afford an eligible opportunity for carrying out a large scheme, dealing with workmen's dwellings, and of making at the same time a fine street which would relieve the traffic, and ought to be a very profitable speculation to those who undertook it. Mr. Nevill seconded the vote of thanks.

Mr. Hugh Maclachlan said that Mr. Stevenson had referred to the great disadvantages of straight lines in streets. These were carried out to an enormous extent in the United States, the play of light and shadow being altogether wanting. There had been several opportunities recently of laying out squares and circuses in London, which had been altogether lost. Hyde Park-corner, the junction of Northumberland-avenue with Trafalgar-square, and Piccadilly-circus had been broken up into little archipelagoes, instead of one great plot, which would have been quite as useful for the traffic, and more architecturally striking. With regard to the laying-out of streets, what was wanted in large towns was an improvement in the pathways. The roadways were very fine and wide; in fact, sometimes too wide; but the pavements were hardly ever of sufficient width. A roadway for four lines of traffic was as much as ever was required,* but a pavement of 16 ft. wide was decidedly necessary in some cases.

Mr. William Woodward remarked that fifteen years ago so warm a reception would not have been given to such a paper (cries of "Oh, oh"). Not only the British public, but the Institute, had been educated to take these matters into consideration. Mr. Stevenson had looked upon the subject with the eye of an artist, and at the same time had imported into his paper essentially practical considerations, his observations on some of the provisions of the Metropolitan Building Act being to his (the speaker's) mind most opportune and true. He disagreed with Mr. Stevenson on the matter of open thoroughfares. There should be no *cul de sac* to any London street, and the quadrangle suggested by Mr. Stevenson would not tend to the health of a large artisan population. With regard to turrets and spires, they would add very much to the picturesque appearance of the metropolis without doing any damage. Any person standing at Magdalen-bridge, and looking along the High-street of Oxford, must have been struck by the mingling of its Classic and Gothic architecture. The Institute, he believed, might take credit for suggesting some of the improvements which had taken place in London during late years, and if such gentlemen as Mr. Stevenson would only hammer away at those subjects they would be able in time to educate the British public to the standard which he hoped they would eventually attain. He thought the County Council would do well to consult the Institute on all matters affecting the general health and well-being of this splendid Metropolis (applause).

Mr. Edwin T. Hall drew attention to the fact that sometimes, owing to their position, straight streets might be an element of the greatest beauty. They might remember that the city of Turin was exceedingly beautiful, although it had rectangular streets from one side to the other. The same conditions would hardly apply to London, for the reason that it was unique, and that no general rule could apply to it. He could never understand the reason for the Metropolitan Building Act preventing any projections in front of the building line, excepting what were considered to be architectural. There was no limit in the Building Acts to the height of buildings, excepting when new streets were laid out. It should also be remembered that ancient lights constituted a property, and could not be got rid of except by compensation. As the County Council was now entering upon its work, the Institute might well make a series of recommendations to the Council, with a view to amending the Building Act. In fact, the present was the time when the Institute might make its influence felt by giving practical suggestions which might prove to be of the greatest value.

Mr. Thomas Blashill, Superintending Architect of Metropolitan Buildings, said they must all agree that they had listened to a valuable paper, and in the main they would very much concur in what Mr. Stevenson had laid down. He, however, differed with him as to the dirtiness of ancient streets, which were picturesque; in fact, he had never seen such dirty streets as those of London (hear, hear). Mr. Stevenson also seemed to think that Paris was a dear city because so much had been expended upon its buildings, but that was not the case; the reason was that so large a number of people flocked to it in excess of its accommodation. Turin, which Mr. Hall had mentioned, he considered the most monotonous city he had ever visited (laughter). In spite of its prospect of distant mountains, and the novelty of being in a foreign place, its appearance was most monotonous, in consequence of the pernicious effect of its straight lines. With regard to the London improvements, every new street was curved, and it only rested with the architects to take advantage of their opportunities, which no doubt some of them had. When the projections proposed in a building came over a man's own land, the solution was comparatively simple, but when they came in front of the general line of building, it was only right that the neighbours and the local authorities should be consulted. A very large number of those applications had passed through his hands, and he could safely say that a considerable number of them had been sanctioned. The provision as to 4½ in. window reveals in the Building Act might seem absurd, but in a narrow street there was a special danger of fire from opposite buildings if the wooden window-frames were brought flush with the face of the wall. In the old buildings, too, where the timber came right to the front, it was a solid piece of wood, which not only carried the window, but also the arch above. There was a good deal in what had been said about the possibility of having picturesque elevations by making the heights irregular, and the projections also irregular above the ground story, but he was afraid the clients were the great objectors. There were a great deal too many rules; indeed, he disliked rules and the enforcement of them if it could possibly be avoided. The important question of the accommodation for workmen was tied up with the construction of new streets. Mr. Nevill was the victim of a common fallacy when he spoke of pulling down a large sweep of buildings and making a profit out of it. If Mr. Nevill would take any district, and work out the value of property by the aid of some surveying knowledge, allowing also for trade compensation, he would see whether he could make any profit whatever out of it, or even avoid making a serious loss. The Building Act no doubt required amending very much, and he believed sooner or later, when the County Council had nothing to do, it would take the matter up (laughter and applause).

Mr. Charles Fowler remarked that, with regard to the heights of buildings, &c., before they called upon any authority to lay down rules, or criticised rules already in existence, they had better be sure they were all in accord as to what they wished to have. The last-proposed amendment of the Building Act was to restrict the height of buildings, and professional men were called before the Select Committee of the House of Commons to back-up the opinions expressed. Several architects and surveyors of large practice, however, supported the view that it was absurd to attempt to limit the height of any London building. Therefore, before they criticised the acts of those powers to whom authority was given, they had better be quite sure of what they desired to substitute. As to the crookedness of streets, any body of architects who spoke of laying out streets so as to make them crooked would be sure to be ridiculed by the public.

The President added that he was very pleased with what Mr. Blashill had said as to the ease with which they might get leave for projections over the streets. He could say that he had never found any difficulty about that, and he was rather surprised to find Mr. Stevenson making so much of the point. If architects tried for such things they were generally successful in getting them (applause).

The vote of thanks, on being put to the meeting, was very cordially received.

Mr. Stevenson, in his reply, said he had certainly expected some opposition, seeing that the things he had been condemning were, so far as he was aware, the things that had been practised. He was, therefore, rather surprised to find that, instead of being opposed, he had been, on the contrary, blessed altogether. Mr. Hayward would like to have streets partly straight, and that was what he (the speaker) had said,—that the streets should be made up of different straight pieces. Mr. Hall had referred to Turin as an example of what a fine thing straight streets were; and no doubt if one could get streets with colonnades on each side 24 ft. wide, each street ending with a background of snowy mountains, there might be some reason for having them straight. But where that was an impossibility it was, perhaps, an advantage to see the different buildings as they were turned round to the eye. There was a passage about the Church of St. Mary-le-Strand in his paper, which he had left out in the reading in order to save the time of the meeting, but which they would find in it when it appeared in the "Transactions."

The President announced that a Special General Meeting would be held on Monday, April 8, for admitting certain local societies of architects into alliance with the Institute, and for considering the report on a scheme of progressive Examinations proposed by the Education Committee.

The proceedings then terminated.

* We do not concur in this view. In our opinion room for at least six lines of traffic is desirable in some streets,—two for light and fast traffic in opposite directions, and two for heavy and slow traffic; leaving space on each side of the street for vehicles to stop for loading and unloading goods, and for cabs and carriages to take up and set down passengers.—Ed.

Illustrations.

THE CHÂTEAU OF AZAY-LE-RIDEAU.

THIS château, situated in the department of Indre-et-Loire, has a good deal of resemblance to the better-known château of Chenonceaux. Like the latter, it dates from the best epoch of the French Renaissance, and, like it, is picturesquely situated amid the windings of a river which, from almost every quarter, gives reflections of the château and its turrets.

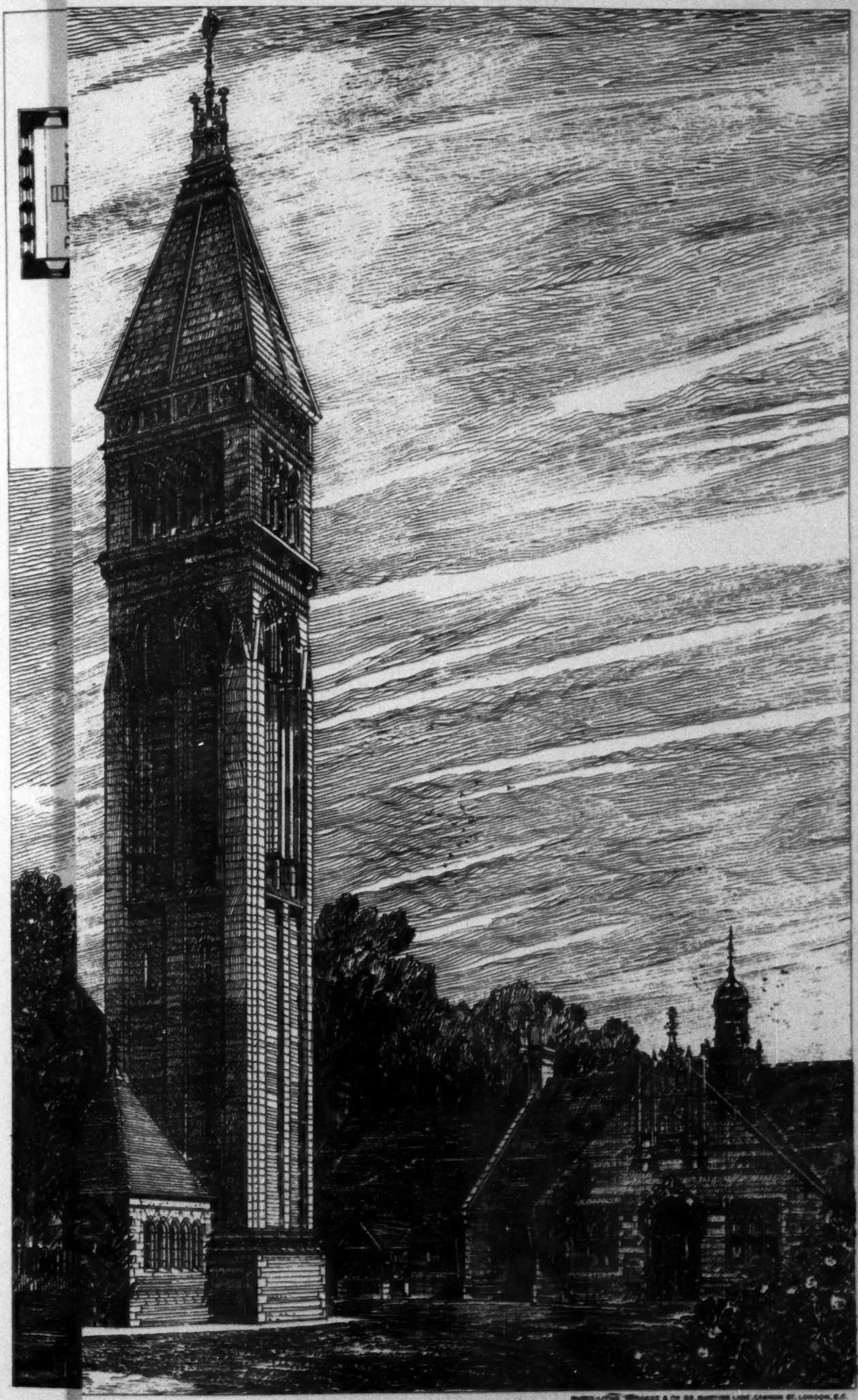
The building, which is scheduled among the "Monuments Historiques" of France, replaced a former more ancient château which Gilles Berthelot, Treasurer-General of Finance and "Seigneur d'Azay-le-Rideau," caused to be demolished in 1520, that is to say in the first years of the reign of Francis I.

After Berthelot, the château changed owners many times; among them may be mentioned Henri de Beringhem, "premier ecuyer du Roi" under Louis XIII. and XIV., who added the stable buildings and the room called the "Chambre du Roi," in which Louis XIV. slept.

The château, built on an island formed by the Indre, presents a large main block flanked at the right by a return wing. The principal façade recalls, by the purity of its style and delicacy of its details, the art of Jean Goujon. The most interesting part of the façade is the design of the portal, which is shown to a larger scale in one of our plates, amid the ornamental details of which the devices of Francis I. and Diana of Poitiers everywhere appear. This portal of three orders encloses a curious staircase. The two bas-reliefs on the first frieze represent the one an ermine, and the other a salamander in the midst of flames. The same subjects are repeated on the sills of the windows above the cornice. These bas-reliefs are accompanied by these two devices—NUTRISCO ET EXTINGUO and UNG SEUL DESIR. The columns with niches over them, now deprived of their statues, serve to unite the ground story with the upper stages of the design, where the pilasters and architraves are covered with arabesques of beautiful design.

Another entrance, also of great delicacy of detail, is made in the return wing; but it is generally by a smaller door to the right of the last-named, and giving access to the staircase of one of the towers, that visitors enter into the interior of the château, which has been very completely restored and contains many archæological curiosities, as well as an important collection of paintings.

Among the principal rooms thrown open to the public are a small vaulted room situated above the entry; a very fine bed-chamber; a large salle-à-manger, a square apartment in the angle of the building and containing some fine furniture of the Renaissance period; a vaulted corridor decorated again with the Royal salamander; a large staircase, resembling in general design that of the Pavillon Sully at the Louvre, and a room which has a very fine chimney-



R. Spence, Architect.

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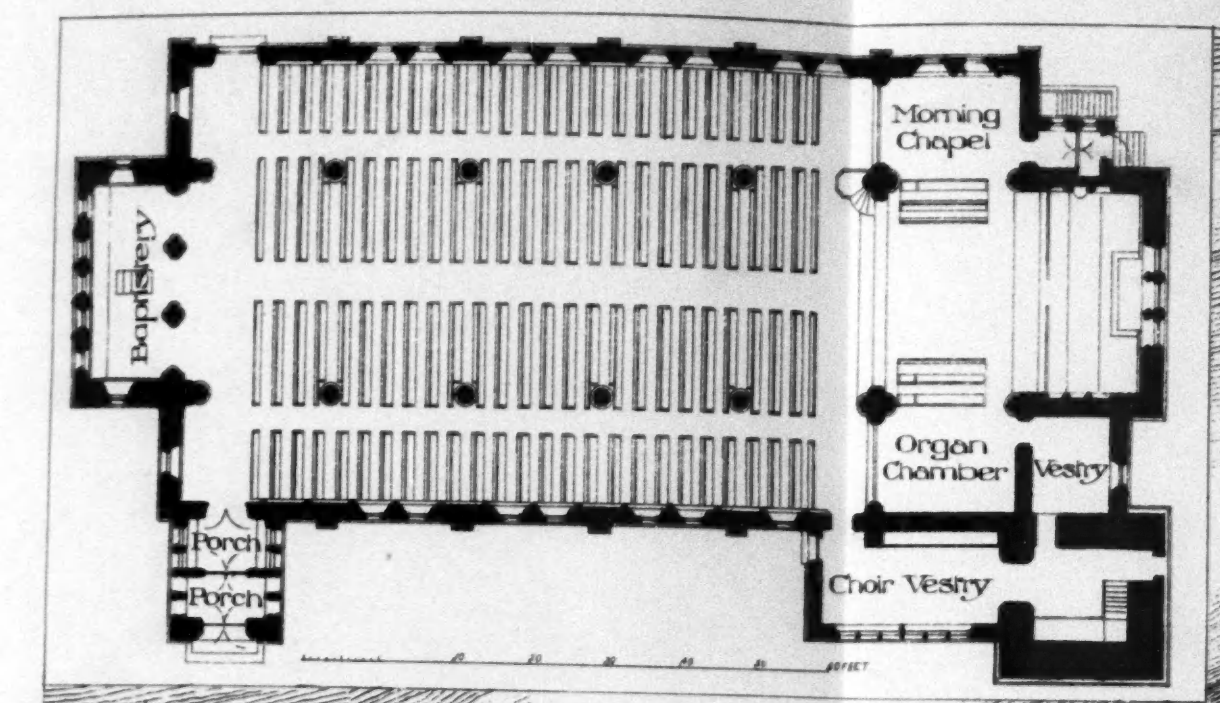
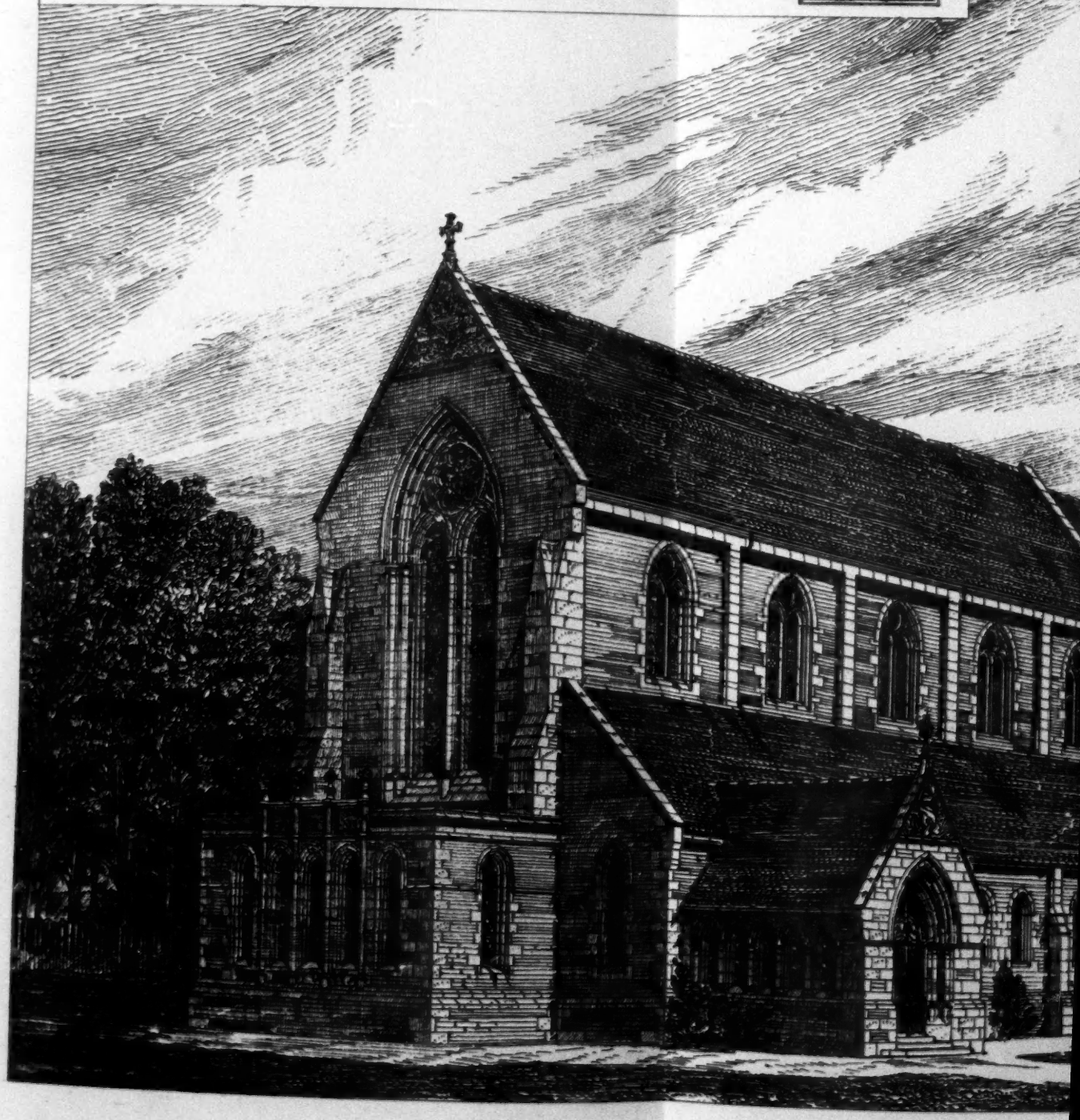
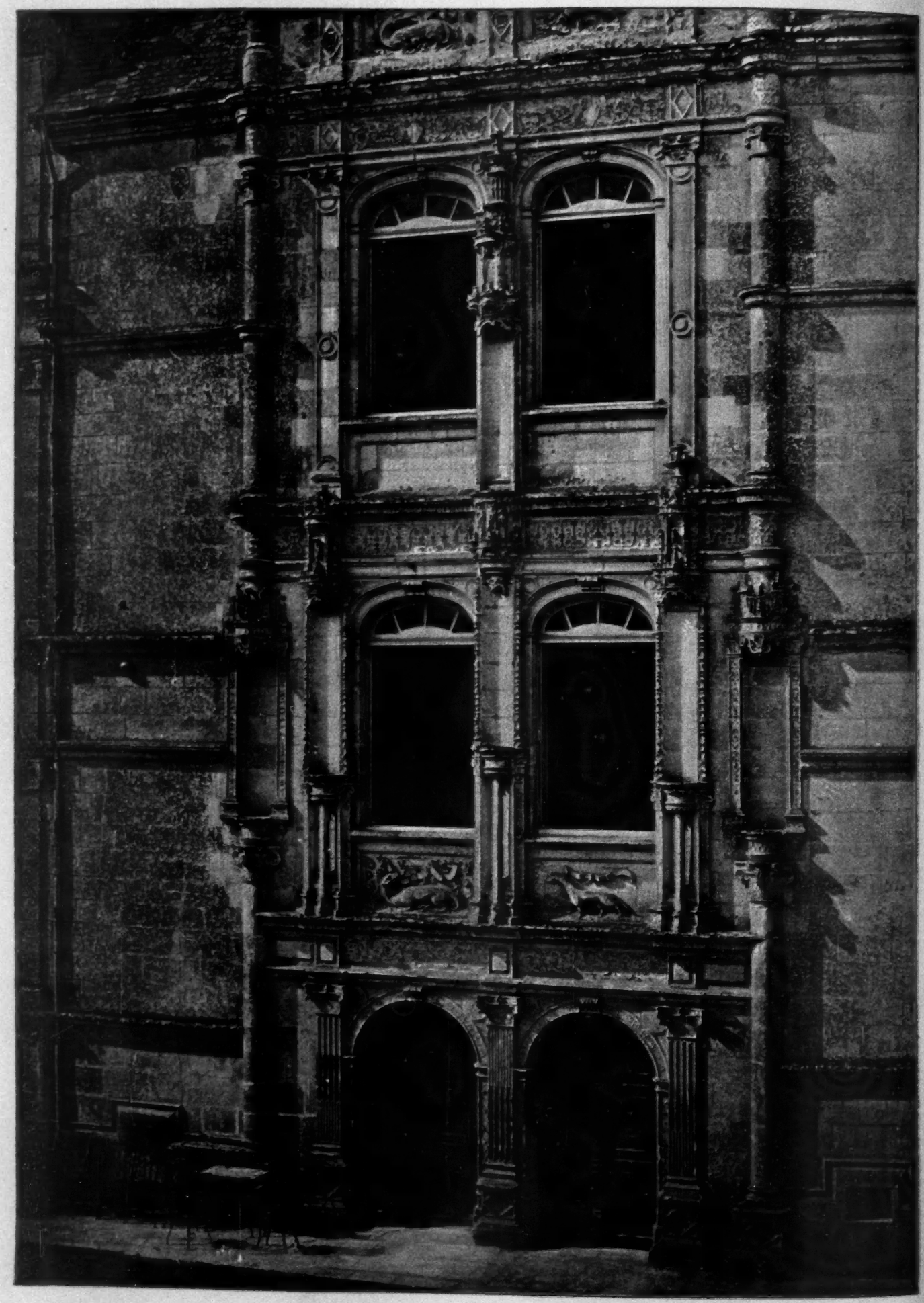




CHURCH OF ST. GEORGE, NEWCASTL

PHOTO-LITHO. WOODALL & CO. 58, HASTING LANE, CAMDEN RD. LONDON, E.C.

EWCASTLE-ON-TYNE.—Mr. T. R. Spence, Architect.



The Phototype Co., 310, Strand, London.

CHÂTEAU AZAY LE RIDEAU. DETAIL OF ENTRANCE AND WINDOWS OVER.

Four holes cross.
S. Neot.

Note. The dotted upper portion is gone.

SW. SE. NE. NW.

A. G. Langdon
8 Sept 88

Cardynham Ch Yd.

Joint

Section, A B.

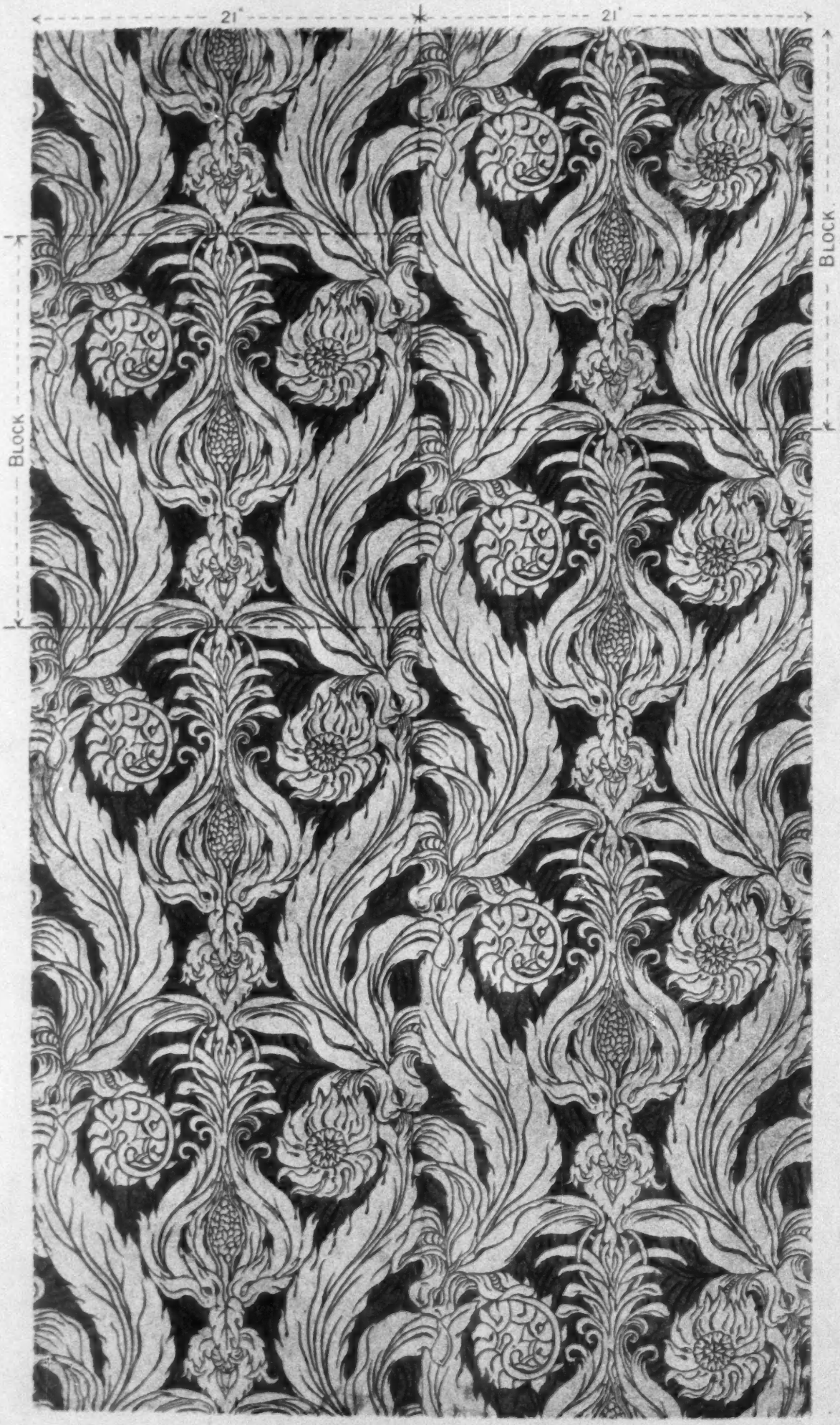
Present ground line.

S. E. N. W.

A. G. Langdon
10 Sept 88

PHOTO-LITHO. SPRAGUE & Co 22, MARTIN'S LANE, CANNON ST., LONDON, E.C.

CELTIC CROSSES IN CORNWALL.—Drawn by Mr. A. G. Langdon.



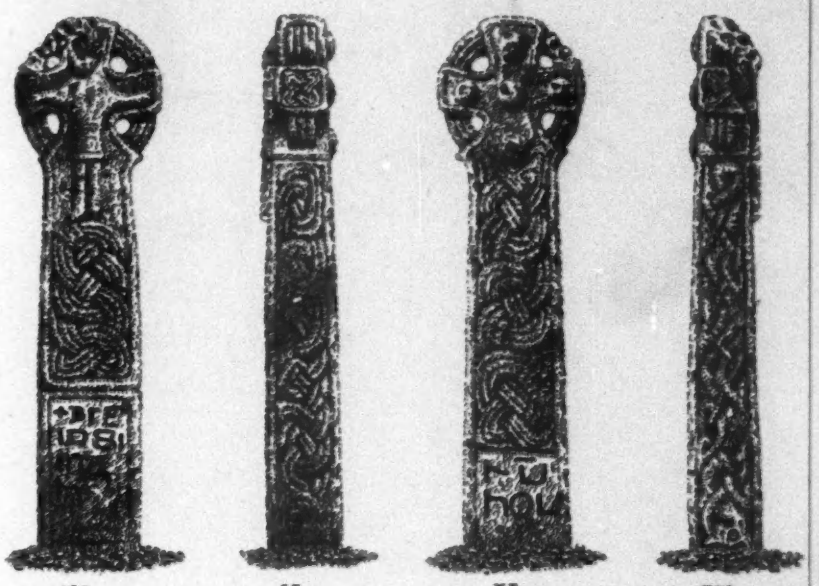
DESIGN FOR WALL.—By Mr. A. B. Pite, A.R.I.B.A.

(Drop pattern.)

DESIGN FOR WALL.—By Mr. A. B. Pite, A.R.I.B.A.

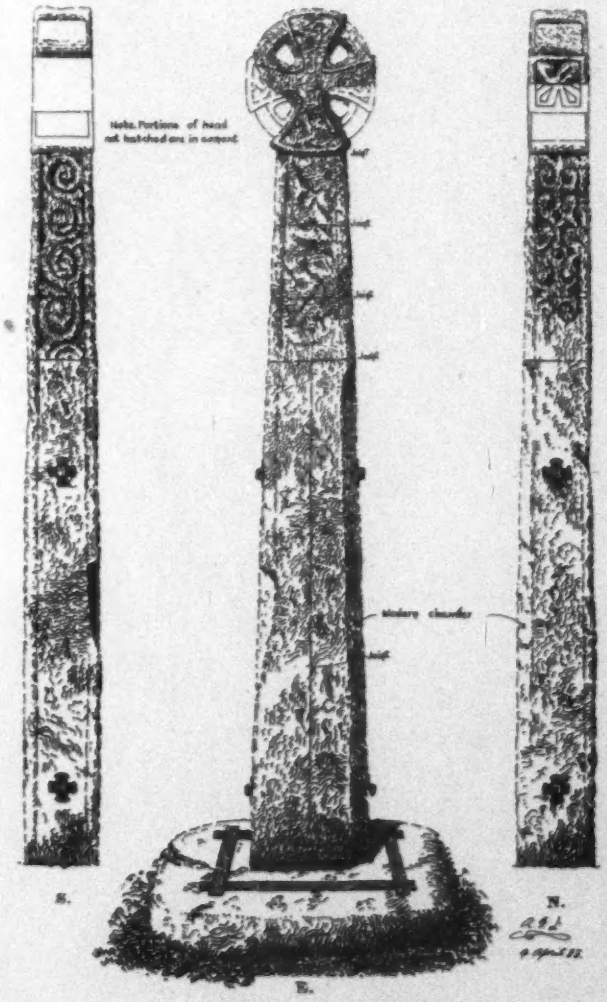
(Drop pattern on alternating blocks.)

Lanherne.

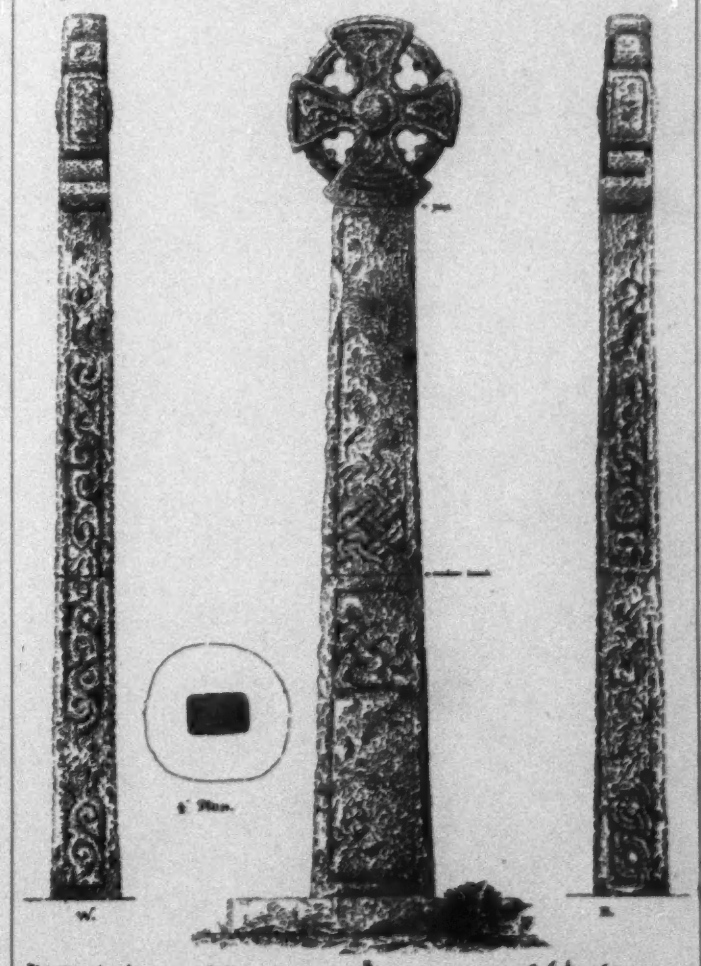


Prideaux Place.
Padstow.

S. Teath.



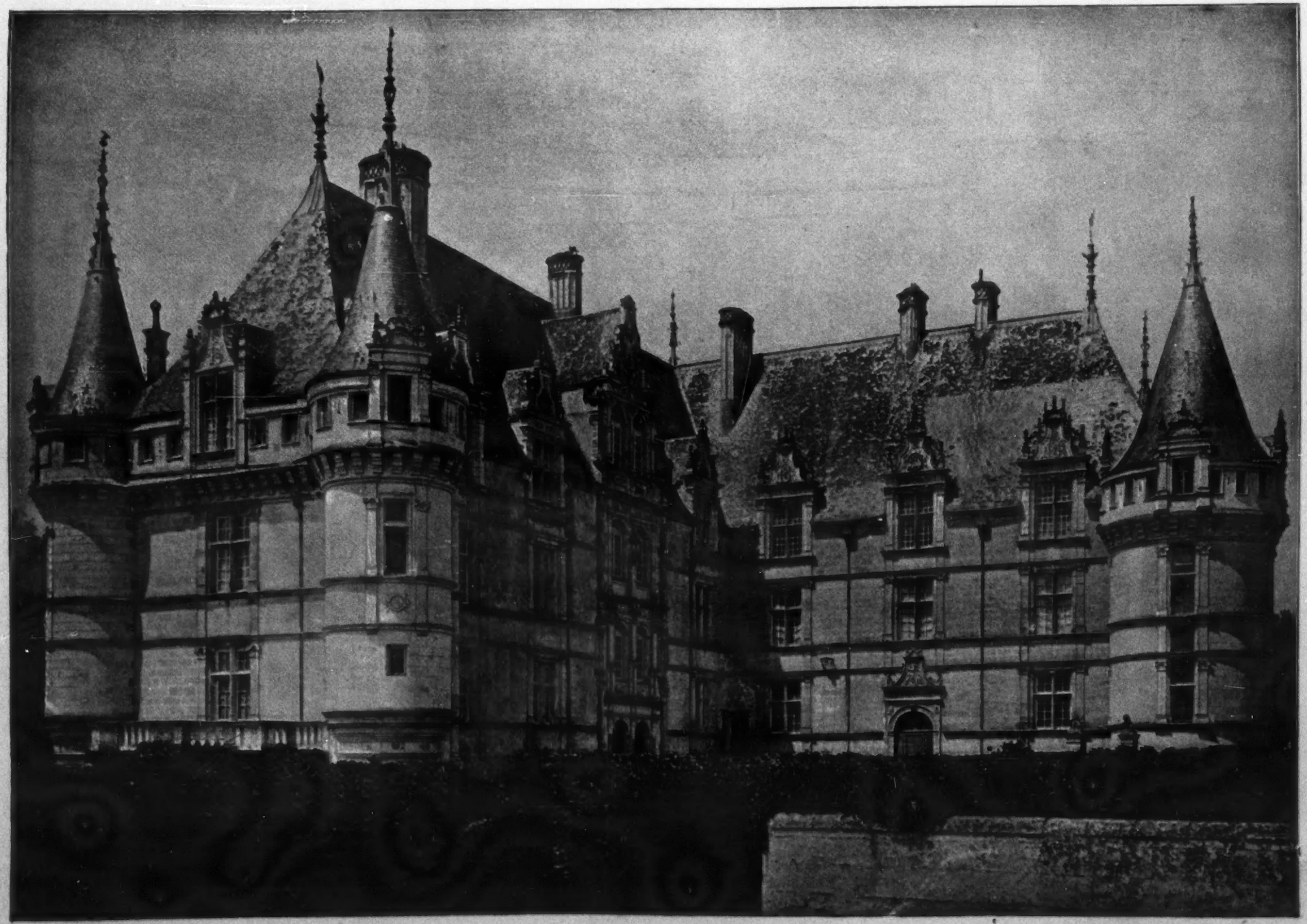
Quethiock. Ch. Yd.



1" Scale.

PHOTO-LITHO. GHEAGUE & CO. 33, MARTINS LANE, CANNON ST., LONDON, E.C.

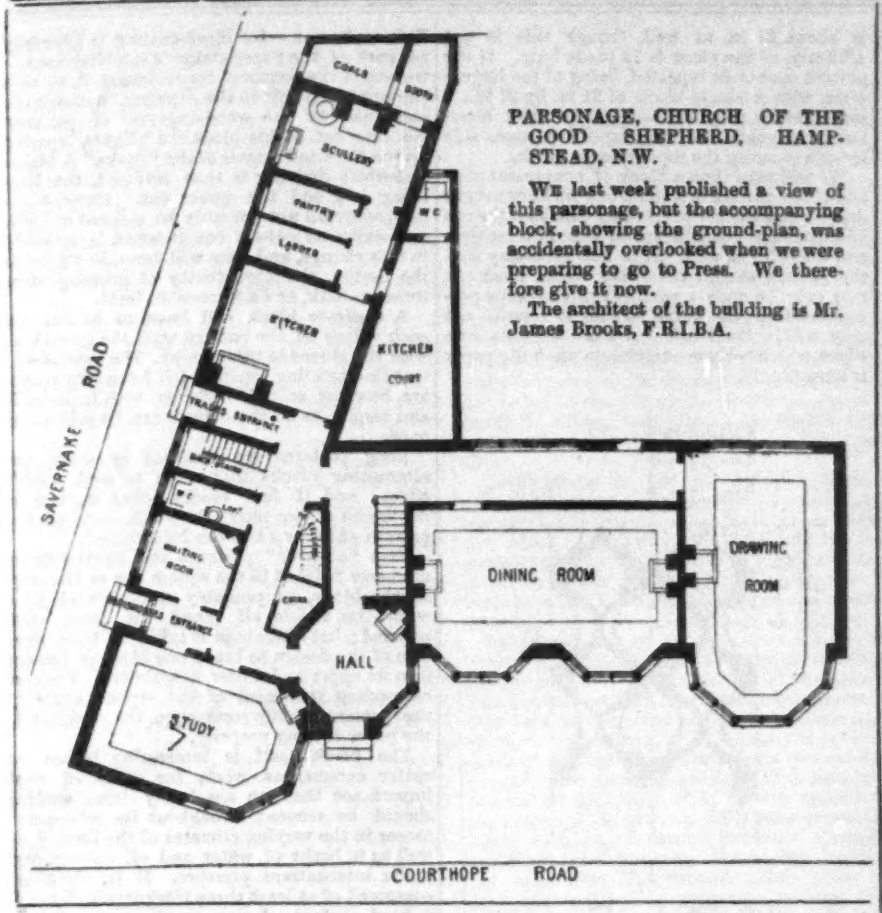
CELTIC CROSSES IN CORNWALL.—Drawn by Mr. A. G. Langdon.



CHÂTEAU AZAY LE RIDEAU. GENERAL VIEW.

The Phototype Co., 103, Strand, London.

THE BULLDOG MARCH 30, 1899



PARSONAGE, CHURCH OF THE GOOD SHEPHERD, HAMPSTEAD, N.W.

WE last week published a view of this parsonage, but the accompanying block, showing the ground-plan, was accidentally overlooked when we were preparing to go to Press. We therefore give it now.

The architect of the building is Mr. James Brooks, F.R.I.B.A.

piece. The rooms on the second floor contain a number of historical portraits.

More fortunate than Chenonceaux,—which was put up for sale after the bankruptcy of its last proprietor,—the château and manor of Azay-le-Rideau remain in the hands of a gentleman of old family, M. le Marquis de Biencourt, who is a lover of history and archæology and has preserved the place with the greatest care. Thanks to him, the archæologists and travellers who visit the district of the Loire, so rich in old châteaux, can find here, nearly intact, one of the finest examples of early French Renaissance architecture.

CHURCH OF ST. GEORGE, NEWCASTLE-ON-TYNE.

THIS church is now in course of erection at the north end of Osborne-road, and is, together with the site, organ, and a peal of eight bells, the gift of C. Mitchell, Esq., of Jesmond Towers, to the parish of West Jesmond. The total length, including baptistery, is 150 ft.; width, 63 ft. It consists of a nave, north and south aisles, chancel, baptistery, organ-chamber, clergy and choir vestries, and a morning chapel.

The whole of the seating, choir-stalls, organ-screens, morning-chapel screens, and aisle dados, are in wainscot oak, the seats being placed on a teak block floor. The altar and reredos are elaborate in detail, and are executed in Pavonattza marble of quite an exceptional colour quality. The floor of chancel is to be laid in inlays of rouge, jasper, and Sienna marbles. The whole of the aisles, baptistery, &c., are to be of Rust's vitreous mosaic, and embracing various emblems, worked out in rich schemes of colour.

The walls of chancel for a distance of 5 ft. up from floor are to be lined with rich red marble, over which is to be a 4-ft. frieze of elaborately painted tiles, and above these figure-subjects are to be executed in mosaic.

The font-bowl is of Mexican onyx, placed on an arcaded base of alabaster. The font will have a cover of richly-wrought iron and copper work.

The east and west windows are to be filled with painted glass illustrating the "Nativity" and the "Crucifixion." The altar-rail, pulpit-desk, gas-fittings, &c., are to be in combinations of brass and copper work of a specially ornate character.

The contractor for the building is Mr. Amos Gray; for marble-work, Messrs. Emly & Sons; and for carved oak-work, Mr. R. Hedley and Messrs. Robson & Sons, all of Newcastle-on-Tyne.

The metal-work is by Mr. A. Shirley, of Cable-street, London.

The architect is Mr. T. R. Spence.

CELTIC CROSSES IN CORNWALL.

THESE illustrations are from drawings by Mr. A. G. Langdon, of whose lecture on the subject, recently delivered before the British Archæological Association, a *résumé* will be found in another column.

WALL-PAPERS.

THE two illustrations are of papers exhibited as examples of "drop-patterns" at the last meeting of the Architectural Association, in connexion with the paper which we print on this and succeeding pages.

In each case two widths of paper have been photographed in order that the "drop" in the hanging might be exemplified. The papers are produced by Messrs. Hayward & Son, from designs by Mr. A. Beresford Pite.

The Artists' Volunteers' Headquarters. His Royal Highness the Prince of Wales formally opened the headquarters of this corps on the 25th inst. The façade of the new building is in the Renaissance style, with red terra-cotta dressings. The large medallion over the entrance was executed by Mr. Brock, A.R.A., who is a lieutenant in the corps. On the ground-floor is a large entrance, 10 ft. wide, with orderly, committee, officers' and commanding officer and adjutant's rooms, and a spacious drill-hall, 100 ft. long by 52 ft. wide, top-lighted, with a gallery at the south end, 52 ft. by 15 ft. In the basement are the armoury, rooms for quartermasters' stores, lavatories, and dressing-rooms for the men. On the first floor a large general room for the men, 52 ft. by 20 ft.; canteen, with lift to kitchen over, and sergeants'-room. On the top floor are dressing and bath-rooms, &c., for officers and sergeants, and accommodation for headquarter staff. The total cost of the new building, including furniture, has been 6,500*l.*, of which the officers, non-commissioned officers, and men have subscribed 3,200*l.* The work has been carried out under the honorary architect, Colonel Edis, by Messrs. Charles Kynoch & Co., contractors, Clapham.

THE DESIGN AND MANUFACTURE OF WALL-PAPERS.*

IN attempting to describe the art and practice of designing wall-papers, it is difficult to avoid entering on the very well-trodden and wide field of general decorative design. We had better, therefore, agree that a handbook or a course of lectures by some well-known and popular ornamentist be taken as read, and proceed to such particulars as shall enable us to better understand some of the excellent papers that are now being produced, so that, knowing what is best both in design and manufacture, we may stimulate the demand for papers of artistic excellence.

Perhaps it is scarcely necessary to maintain here that wall-papers, in selection and use, and consequently in manufacture and design, are within the province of the architect's direction.

In a generally figurative sense, if piers, beams, and rafters are the bones of our rooms, and brick, stone, and plaster the flesh, the wall-paper provides the complexion that gives charm and beauty to the home. Wall-papers are, in fact, the backgrounds not only of our pictures and looking-glasses, but of our whole social life; they surround us at day and night, at our meals, in our drawing-rooms, offices, and bedrooms. In our passages and halls they give comfort or chilliness to the whole house, while in the sick-room their designs,—more than their poisonous or non-poisonous constituents,—excite or calm the delirous visions of the patient. This, as most of us know, is no exaggeration.

Unhappily, we have become accustomed to the presence of a strong line of demarcation between the architect's ideas of artistic internal effect and the upholsterer's conceptions on the same subject. Nearly all architects must be painfully aware how bad furnishing mars good buildings: it is really beyond their province, and they feel helpless. But in wall-papers we are upon a borderland between the two foreign peoples, and if our selection of papers is judicious, we shall find curtains and carpets beginning to rhyme with our walls, joinery, and ceilings. I say "rhyme" rather than harmonise, for we are apt to lose sight of the powerful quality of contrasting effects. Love of harmony may become morbid, even in architects: for example, the insipid effect of the pale-green window-frames in red brickwork that we have seen, rather than the clear, bold contrast of the white frames. If wagons were painted in harmonious rather than in contrasting colours, and if military uniforms were in æsthetic tones of harmony, we should be deprived of distinct elements of beauty in our somewhat murky surroundings. I digress upon this point because in the internal arrangements of our homes it is a hopelessly expensive and unprofitable task to attempt to reduce walls, paintwork, ceilings, stuffs, furniture, pictures, and mirrors to harmony. Be prepared, in selecting your wall-papers, for healthy contrasts of colour and form in the final effect of the room when furnished. "Proceed carefully, and you will do as a wise and prudent man ought to do," is the advice in Wilars de Honecourt's Sketch-book, and this will enable you to avoid such exaggerations of contrast as the use of a wall-paper consisting of nothing but vertical stripes of blue or pink and white,—a curiosity of taste borrowed from the French. I found a paper of this sort the other day very oddly covering the walls of a small business room in one of the finest of Mr. Norman Shaw's London houses, though the other rooms were in all respects handsomely and consistently decorated. The evident idiosyncrasy of the tenant produced a too violent contrast, and the effect was almost ludicrous.

We can all remember the unsophistically pictorial and naturalistic wall-papers of our grandfathers' houses, which qualities certainly have the merit of making impressions upon children's minds. They dreamt that they dwelt in marble halls, and realised their dreams in their blocked wall-papers; and in their printed oak-grain gave us a faintly-surviving tradition of the days when real oak wainscotting dispensed both with decorator and wall-paper manufacturer. But other influences of a different artistic nature are apparent. Do not the landscapes,—generally mountainous,—the verdant valleys, luxurious pines and palms, and occasional ruins, and perhaps eloping lovers, betoken the influence of the romantic landscape painters, with

* A paper by Mr. A. Beresford Pite, A.R.I.B.A., read before the Architectural Association on the 15th inst., as briefly mentioned by us last week.

Claude at their head, and an early exponent in our grandfathers' co-temporary, Turner? This grandiloquent scenery is also to be found on print blinds and ceramics, but by the time of our early childhood it had dwindled into Red Riding Hood and "The House that Jack Built," lately so happily revived in æsthetic and decorative garb.

Our fathers' houses are even now recording another past epoch, that of the stern revolt from scenic taste to Gothic sterility of internal comfort. What a variety of stencilled horrors arose to supply the lack of all precedent, upon which alone the revival could flourish!—mostly of distemper in plain tints, "French grey" being a favourite, as it was thought to go well with varnished pitch pine, the chasteness of whose stop-chamfers required the absence of other surface decoration. Comfortless stone and tile mantels, and scraggy wrought-iron gas-fittings, complete the characteristic Gothic interior.

There were a few bold spirits who attempted wall-papers. Pugin the younger, if not his father, tried to adapt stencil patterns that would have done fairly well for the decoration of detached blocks of masonry. Other horrors in laundress's blue and gold, or in crimson flock and gold, and other things mostly heraldic in origin, followed, and were used for church chancels and the choicest Mediæval houses.

Some decorative designs of E. Viollet-le-Duc's, used in Pierrefonds, suggest wall-papers, but they are all violent and crude in white, crimson, and gold.

Some clever architects attempted patterns from encaustic tiles, and were gradually led into adopting the peculiar form of stiff-neck that infected all Mediæval metal-work a few years ago. When the late Mr. B. J. Talbert, who had been a great sinner in this latter respect, discovered the sun-flower, a very marked change began to be felt. Mr. E. W. Godwin and Mr. Eastlake then showed us how to use bamboos and pomegranates, they having learnt from the Japanese and Italian fabrics, and we then found ourselves fairly launched upon the stream, some part of the flood of which is represented here to-night.

The progress of household decorative art has in no branch been more marked than in wall-paper design. A study of decoration, as distinct from the pictorial and realistic attempts of our grandfathers, and from the antiquarian pedantry of our immediate predecessors, has been most beneficial, but we are still far from having attained to the tableland of artistic rest, and must still climb.

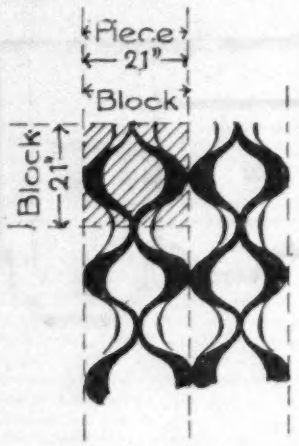
We have only to a very small extent yet made use of any forms other than leaves, stalks, and flowers of conventional or natural character. The study of Japanese art has opened our eyes to free decorative effects, and released us from the sadly petrified bonds of architectural ornament as the only source of idea. But there is a tendency in another direction which may result in a bondage to the patterns of woven fabrics. I am aware of the fascination of the wonderful collection at the South Kensington Museum. By all means let us make use of it as a school of design and fount of beautiful colour, but remember that we want printed papers for nineteenth century life, costume, and atmosphere, and that our prints are smoothly pasted to walls, and do not hang in luxurious folds around duennas' waists or sweep the ground in their trains. Some of the finest patterns of our day are edited from this collection, distinguished by largeness, softness, and beauty of outline, and velvety colourings.

I am afraid that the charms of these fabrics have overweighted the artistic judgments of some of our ablest designers, and a failure to appreciate the more logical requirements of a smooth vertical wall-covering is the consequence. My meaning may be more apparent if I suggest a mental contrast between the broad effect of an Arab wall-pattern and that of an Italian Renaissance brocade done into a wall-paper.

The infinity of geometric design is at our disposal, besides the world of landscapes, marbles, oak-grain, stencils, and botany, upon which we have touched. The wide, wide world, ever widening in imaginative design, is a kaleidoscope for the decorative artist to turn and portray.

In practical design the wall-paper pattern is 21 in. wide, the size of a trimmed piece of paper, unless some exceptional width or foreign size, as that of French paper,—which is 18 in. wide,—is required. The most convenient length of pattern is about 21 in. as well, though this is not arbitrary, as the piece is 12 yards long. If the pattern cannot be repeated, being of too large a scale, with a single block of 21 in. by 21 in., a second block may be designed to work alternately in length, the hanging of the pieces side by side securing the repetition in width.

We will take then a block of convenient size, and if our pattern is a small one we have only to draw it over the surface, taking care that the top and bottom edges join one another in repeating, and the sides as well. It is not necessary that the pattern should cover the whole block; it may only be upon a part, but this must be proportioned to the whole so that it repeats not only within the block but also with its own edges, which become neighbours when the paper is hung (fig. 1).

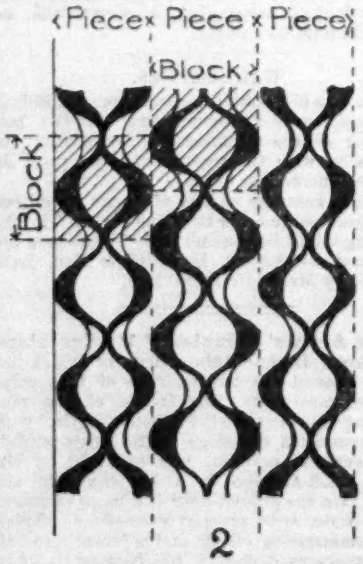


1

A Plain Repeat Pattern

The single block of pattern is thus repeated throughout the length of the piece, vertically, and when hung horizontally around the wall.

The "drop pattern" is a device for obtaining an alternation of horizontal pattern, the centre of each block of the pattern being dropped in hanging the adjoining pieces so that the centres take a diagonal line across the wall (fig. 2). The



2

A Drop Pattern.

N.B. Same Block as 1 but hung as drop

alternate centres will, however, be level with one another if the pattern drops half its own depth. The designer is thus enabled to use half the width of each adjoining piece for radiations, or branches from the centre, having to provide on the block for radiations from the adjoining centres.

The design having been made of suitable size, it is handed over to the block-cutter to prepare the block from which the pattern is printed. This craftsman,—for block-cutting is generally no part of the paper-stainer's establishment,—translates the drawing by reversing it, so that the print responds to the drawing, in much the same way as the wood-engraver of pictures. He cuts out of his block the "lights," sparing up the lines and masses of the "darks." A black-and-white drawing is thus reversed, the lines being left and the spaces cut. However, as the paper will not probably be printed in black and white, no artistic consequence is attached to this change, and you will have, in colouring the design, the opportunity of printing light tones on dark, or dark tones on light.

A separate block will have to be cut for each colour in the pattern upon the ground, as with the stones in lithography. The processes of machine-printing, upon which I can only touch, are, however, entirely different, both in methods and results, as all the colours can be printed at once.

Long patterns are obtained by using two alternating blocks that work to each other's edges; and if four blocks,—that is, two in depth and of two pieces in width,—are used, a pattern 42 in. by 42 in. can be obtained.

Free "all-over" patterns and flowing forms are never finished to the square line of the edge of the block, or probably a horizontal joint would be visible all round the room when papered; but advantage is taken of the formation of the design to break one block of pattern into its upper and lower neighbours. The corresponding treatment of the vertical edges of the pattern wholly rests upon the designer, if the paper is hung properly.

The block itself is interesting before the cutter commences work, for it is of vital importance that an absolutely level surface should be secured throughout its subsequent career in the varying climates of the factory, as well as in baths of water and oil colours, and under intermittent pressure. It is, therefore, composed of at least three thicknesses of wood, a hard surface of pear-wood,—our useful T-square tree,—or of sycamore, with two grooved and reversed backings of deal, altogether about 2 in. thick. The printer adds pins in the corners to enable him to fix the blocks of the pattern with accuracy to the paper, and a strap handle at the back for lifting it in and out of the tray of colour.

Wooden blocks pure and simple, however, cannot be cut to produce very fine lines or dots in the pattern, and recourse is had to thin copper lines where necessary, and points for dots, which are all bent and hammered into the surface of the block by hand. In elaborate or delicate patterns this is a laborious and costly operation. A glance at the real block will show how patiently and artistically it is carried out. Some blocks, where there is a large quantity of copper-work, have a most beautiful effect, and, I doubt not, in years, maybe centuries, to come, when the nineteenth occupies to the New Zealander the same relative position as the thirteenth century does to us, that some diligent brass-rubber will find delightful occupation upon the floors of wall-paper factories, as I have observed, in more places than one, that by-gone blocks become the pavement of the cellars.

The pattern-block being complete, we consider the paper next. Patriotism demands that it should be of English make, and tradition that it be 22 in. wide. The manufacturer supplies continuous rolls of this width, which is cut,—when honestly done,—into lengths of 12 yards, and a trifle over for starting and finishing the pattern. The pattern being 21 in. wide, a margin of, say, ½ in. on each side is left for trimming, the nett size of a "piece" being 21 in. wide by 12 yards long, and contains 63 superficial feet. The paper is white for ordinary and best use; but there are other kinds known as "pulps," some of which we know as tinted lining papers. These are often of very serviceable and artistic colours, and save the trouble and expense of covering the paper with a coloured ground. A useful grain, and sometimes a glossy surface, are obtained in "pulps." The substance is, however, softer, more porous, and less durable than that of good white paper. For safe low tones of colour and economical prices these kinds of wall-papers are highly to be recommended.

The colours with which the papers are printed are simply ordinary tempera, consisting of the colouring pigment, a body of whiting, and carefully prepared size. Apart from the æsthetic mixing of the colours, skill and experience are required to ensure a permanent colouring, and

a ground that will retain substances such as talc, to give the paper surface and polish, or that shall form a safe body upon which to lay gold size, and be the means of obtaining many other little effects which are the craft and mystery of the paper-stainer's art. Exceptional papers have exceptional treatment from the commencement, but we cannot stop to consider any but the fairly general methods of manufacture. Oil-colours are used with a richer effect of body-colour resulting, and some very noteworthy and ingenious tones have been obtained by using transparent washes—*i.e.*, colour, water, and size, omitting the body of whiting.

For "flocking," a strong oil size, mixed sometimes with copal varnish, is required; but this is colourless. The boiling of the size and its composition receive special attention by each manufacturer, but for obvious reasons I cannot particularise methods. You may be solaced by the reflexion that Messrs. Gunter, of Jubilee cake and calves'-feet jelly fame, for many years supplied one of the best-known wall-paper manufacturers with size by the ton, that approached in expense the favourite comestible.

The pigments are ground by the maker's machinery, and should be tested for arsenic, though I am afraid if the public were to insist upon all other less notorious, but equally powerful, poisons being eliminated, the artist's palette would be seriously contracted. Arsenic poisoning, with pirates and smuggling, seems to have gone out of fashion for the present, but the suggestion of tragedy, even in wall-papers, is, perhaps, appreciated by the public, and arsenic is happily ostracised.

The bowl of colour being mixed, the piece of paper is spread upon a long table, and rapidly and skilfully covered by two or three pair of hands, large bristle brushes, deftly wielded, softening the brush-marks, and leaving a perfectly flat tint.

The piece is then hung up from the ceiling to dry, in about four loose folds, the temperature of the drying-rooms being kept up by stoves and pipes.

Talc grounds are at present very popular, some pleasing effects being obtained by colouring over and under the talc with opaque or transparent colours, and by rolling, and to some extent polishing the surface.

The talc,—which is synonymous with mica,—is ground to a fine dust and is powdered on to the colour when partially dried; a handful is thrown across the piece, which is then lifted from one end and smartly rapped underneath with a cane, until the talc has passed over the whole surface. This is performed either on the grounding-table or in a sort of bath. When the talced piece is dry, it is brushed and passed through a rolling-mill of considerable power, to thoroughly smooth and ingrain the particles.

A special preparation of size and oil-colour is the ground of the "satin-finish" surface; this, when dry, is powdered with fine French chalk, and polished with a machine-brush revolving with great rapidity upon the paper under considerable pressure. There are a few "refractory colours" that will not polish without a fine powder of the best mottled soap. All lines, dots, or diapers upon the grounds are printed from blocks before the main pattern is put down.

The embossing is a final process, and is done after all the others are completed. The paper is passed through a rolling-mill, the under roller being of gun-metal and the upper or matrix of paper, layers of paper, softened by water, being compressed by hydraulic power into a mass that becomes as hard as iron, and which almost polishes; upon this the metal roller, as a die, makes its print, and the piece of paper consequently receives a perfectly simple and clear impression.

I have interpolated this process out of its chronological order, as, like the grounding, it covers the whole surface of the paper. We therefore resume with the dried ground colour, with or without a "talc" surface or "satin finish," ready for the printer.

The printing-press is a remarkably Mediæval-looking machine. The printer stands at the table with a lever between his feet, with a long arm overhead, and a bar to transmit pressure to the block; from the right the grounded paper is pulled on to the table and passes to the left after printing; on the right a little behind is the tray of colour. The block, which when new has a few days' soaking to prepare it, is dipped in a kind of sieve, having a blanket bottom, upon which a boy brushes the colour before the block is dipped; the sieve rests upon an elastic bed of pulp, so that in pressing the block upon it a uniform colouring of the engraved surface is ensured. The boy dips the block and hands it to the printer, who carefully and rapidly adjusts it on the piece; the skill with which this important operation is conducted is worthy of a finished draughtsman, and the little pins being placed to print marks on the margin, a small block, or arm, is placed on the back of the block, and the printer, putting all his weight upon the lever, prints the pattern. On raising the block, certain little blobs of colour have to be moved or spread by a finger or camel-hair brush, and the pattern, if a single print of one colour upon the ground, is complete, and it is hung up and dried as before. If two interchanging blocks are required to make the pattern, the dipping and printing are just as before described. To relieve the printer's hands in lifting the blocks, an elastic cord is contrived, by which they hang from above.

Each colour in the pattern is separately printed and dried (there are special exceptions, however), and passes through the press under the block containing the portions for the current colour. The number of these printings involving labour and extra blocks becomes a basis by which the cost of the paper can be estimated.

Raised patterns or grounds are obtained by the use of flock, a finely-powdered wool that is caused to adhere to the surface of the paper. Flock-papers seem to be in increasing demand; they have a richness of effect, as a delicate play of light and shade is added to the colour. A boldly-flocked paper also affords an excellent ground to be decorated with gold or scumbled colour. If the paper is to have a pattern in flock upon plain ground, the printer prints the block with an oil-size of sufficient strength, applying great pressure, thoroughly working the size upon the ground. The piece as soon as printed is placed in a long tray having a canvas bottom, and handfuls of flock are thrown across it. It is then caned, as in the talcing process, but beaten from below a canvas tray. The tray catches the wool that does not adhere to the size, and as each fresh length is treated, a handful of fresh flock has to be added to maintain a supply of the finer particles. The flock is dyed to the required colour before use, as it cannot be printed upon. Flock of the natural colour is more bulky than when dyed, and forms accordingly a heavier surface. A paper that is but once flocked has scarcely any perceptible relief beyond the change of surface; it is therefore successively printed with size and flocked again and again—twice flocked, thrice flocked, six times flocked, as the case may [be. The flocking is executed with such precision that it is hard to realise that the clean, sharp edges of the patterns have not been cut out, instead of being dusted on in six layers of wool.

The gilding of high-class papers is printed with the best gold-size, and the leaf laid by hand and brushed as in ordinary work. Metal dust is used for cheaper effects, and is dusted over the size.

Time forbids me from enlarging upon the many variations of processes and the resulting effects. There are many examples among first-class papers of much ingeniousness and skill. Though the machinery and methods are most primitive, we must not forget that the inventive faculties of wall-paper manufacturers are neither dull or non-existent, but they wisely concentrate their powers upon obtaining artistic effects in the papers rather than in the machinery. The manufacture is essentially a handicraft in every department of which the craftsman's skill and cunning are necessary to artistic success.

The introduction of steam machinery has not yet taken possession of the real territory of artistic wall-papers, In the machine, metal rollers replace the wooden blocks, a separate one for each colour, but all work upon the paper at once. The making-up of the machine is a long and troublesome operation, which does not "pay" unless a very large number of pieces are rolled off at a time. A thinner and commoner paper is used, and a very cheap article is the result, in which the different quality of the metal print from that of the wooden block is very apparent. However, there is no reason why the cheaper kinds of papers should be offensive in forms and patterns to the artistic sense, and we welcome the excellent designs in machine papers that have, I think for the first time, been put forward this year by Messrs. Jeffrey.

Mr. Heaton uses stencils upon the printed papers, thus adding further handicraftsmanship, and a rich complexity or depth of pattern is obtained. A somewhat similar result is obtained in Messrs. Hayward's papers by boldly printing one pattern upon another. Small and delicate underprints are used by several makers with success. Blotch blocks are also used. A broad margin is cut to the pattern upon a fresh block and printed in lighter or darker tone of the pattern colour. The ground surface is thus reduced and solidity of effect gained.

Rather outside the limits of the subject are the many kinds of embossed imitation leather papers that have recently been published. Costly copper dies have to be made, and the paper is pressed in very heavy die-presses. The surface is hardened to take decoration and lacquer or oil colour. These raised and embossed designs embrace other substances than paper, which I must leave by drawing your attention to Mr. Walter Crane's "Golden Age," and to the die of another design lent by Messrs. Woollams. It is probable that such artistic manufactures will be in increasing demand as public taste becomes healthier; but we all hope that the clear lines and beautiful colours of fine wall-papers will never be driven off the field by any competitors, however beautiful in themselves.

Mr. William White, F.S.A., opened the discussion by proposing a vote of thanks to Mr. Pite for his very interesting lecture. In everybody, he believed, there was an innate love of colour, and although it was said that a very large number of people were colour-blind, the proportion was in reality very small as compared with what it was supposed to be. He had always been struck with the fact that decorative colouring was exactly akin to music, the melody being the outline, and the harmony being the colouring filling up that outline. Few, indeed, were insensible to the effect of the colour with which they were surrounded. That might be simply illustrated by observing the difference between entering a room which was simply whitewashed, or another room which was merely grey, or, again, a third room which had an agreeable colouring. Those who talked about the effect of colouring being a mere fancy were under a delusion themselves. Colouring had an effect even upon animals, and there was no doubt it did affect people in their daily life, showing the vast importance of having it properly developed for daily use (applause).

Mr. H. W. Pratt seconded the vote of thanks, and spoke of the great strides that had been made within the last few years in the direction of the design of wall-papers. Some of the most charming designs were now to be had for the asking, which, some years ago, could not by any means have been obtained. They ought, therefore, to congratulate themselves, as architects, on the fact that the manufacturers were now alive to the wants of the age, and were so ably seconding their endeavours to get better decoration introduced into their houses. He was delighted to see upon the walls such specimens of bold decoration. They had been too long accustomed, in looking through the manufacturers' books, to small designs and niggling patterns, but such advances had now been made that something like effective and bold designs were produced. He thought that architects were now coming to the conclusion that they had been mistaken in the past in supposing it was wrong to put a large pattern on the walls of a small apartment. That was a fallacy, for a bold pattern was not at all out of scale, if the colouring was properly proportioned with the design in a small room, whether on the walls or on the ceiling. Respecting friezes, he would like to see deeper ones produced, say from 2 ft. to 3 ft. in depth, and broad in treatment; this was a want which had not yet been met by manufacturers. Then again, on the question of colouring, formerly it would have been most difficult to get a client to accept a paper that had not a number of colours in it, while now they were content with one-print and two-print designs, which were frequently most effective. There was no doubt that there were designs and designs, and it was possible to be smitten with a pattern because of its colour, while the pattern itself was inherently bad. On the other hand, a good design might be spoilt by the colour, and that was a misfortune, because there were only a limited number of designers who could turn out really decent designs in

wall-papers. Some of the best designs had been produced from fabrics, but they, as architects, ought to demand that the manufacturer should give a better treatment of a more strictly architectural character. Flock-papers used to be condemned by sanitarians as unwholesome; but people were returning to them again. The manufacturers had wonderfully improved the designs for flock-papers. The use of a good flock-paper was perhaps about the best possible treatment for a ceiling. Hitherto designers had been afraid to attempt anything more than a small pattern for ceilings, but he would recommend the boldest patterns for that purpose, and they would be found much more effective than smaller designs. It was much to be regretted that, in spite of the general improvement in the wall-papers themselves, it was scarcely possible to find a man who could hang them properly. Indeed, paper-hangers as a class seemed to have greatly deteriorated in technical skill of late years. Architects should, if possible, only use block-printed papers, as the machine-papers were of a much inferior quality, and were certainly less effective. The best designs, too, were printed from the block, while only those that were to be sold in large quantities were printed by the machine. With regard to the imitation of materials, he was sorry to see Mr. Heaton coming out with papers in imitation of marble and mosaics. Surely, if marble was wanted, they had better go in for marble or mosaic itself, and not attempt to imitate it (applause).

Mr. Metford Warner (Jeffrey & Co.) said he had been very much interested with Mr. Pite's lecture, and as a manufacturer he might say Mr. Pite had given a fair explanation of the processes connected with the business. He should go away from the meeting certainly encouraged by the very kind way in which the art or craft of the paper-stainer had been spoken of, and he had been much struck with Mr. Pite's poetic expression as to wall-papers "forming the back-ground of our social life." It was a pity that so many designs for wall-papers were taken direct from the South Kensington Museum and fabrics generally. It seemed strange, with so many clever men, that they could not produce designs showing originality, and which, though based on lines or ideas derived from the past, should not be mere copies. Of course, there were the beautiful papers designed by Wm. Morris, Walter Crane, Lewis Day, and other strictly original designers; but it was a pity there should be so many merely "cribbed" from South Kensington. In fact, there was not a single piece of good work put in the galleries there that was not immediately copied, not merely by Englishmen, but also by Frenchmen and Germans (applause). With regard to machine-printed papers, it must be borne in mind that they were not so permanent as those printed by hand, for while the former merely received the colour as the paper momentarily came in contact with the printing-roller, the hand or block printed papers had the colour pressed into a ground of body-colour.

The Chairman (Mr. H. D. Appleton, President) remarked that Mr. Lewis Day would have been present that evening but for a country engagement which he could not set aside. He thought the thanks of the Association were due to the several manufacturers who had lent specimens of papers for exhibition that evening, and who had also many years exhibited at their *conversazioni* specimens of their beautiful wall-papers (applause). He would also like to explain that Mr. W. A. Pite, who was down to read a paper for that evening, entitled "Architecture in Oxfordshire," had been prevented doing so, and that his brother had kindly come forward in his place (applause).

The Chairman then put the vote of thanks, which was carried by acclamation.

Mr. Pite, in replying, mentioned his indebtedness to Messrs. Woollams, Morris, Heaton, Jeffrey, and Hayward, for the samples of wall-papers exhibited in the room. He might say that the "pulps" were useful when the architect had to paper new walls. As a matter of practice he found that lining papers were nearly always useful on such occasions. He could not help thinking that a printed lining-paper, which was cheap and economical, would be very useful; and he recommended "pulps" for that purpose, as being cheap and effective, and not cheap and nasty. Mr. Pite concluded by giving an interesting exhibition of sketching, showing how to design the common-square and drop patterns.

NEW WINDOW, STATIONERS' HALL.

THIS window, of which a sketch is subjoined, has been presented to Stationers' Hall by Mr. Joshua W. Butterworth, F.S.A., in celebration of his fiftieth year of association with the Company.

New Window, Stationers' Hall.

The window, which is dedicated to Shakspeare, may be thus briefly described:—On the central portion is displayed the figure of the poet. The authority for his features has been derived from the "Chandos Portrait," now in the Ellesmere collection. The signature of the poet at the foot of the figure is from a tracing of his own handwriting, attached to a deed in the possession of the Corporation. The motto, "He was not for an age, but for all time," it will be remembered, was composed by Ben Jonson, his friend and contemporary. Below are two medallions, which respectively represent the "Birthplace of Shakspeare," and the Parish Church of Stratford-upon-Avon. Between the medallions are inserted the arms of Shakspeare, and at the top of the window are represented the arms of the donor, who is responsible for the general composition of the window, which has been executed by Messrs. Mayer & Co.

Presentation to a Borough Surveyor.—A purse of seventy sovereigns and an address were presented, on Monday last, to Mr. G. R. Andrews, Town Surveyor of Bournemouth, on his departure, after eleven years' service in that town, to take the post of Borough Surveyor at Brighton.

New Mission Church, Horselydown.—The designs of Messrs. Newman & Newman, of Tooley-street, have been selected in a limited competition for the new Mission Church to be built in the parish of St. John's, Horselydown.

ARCHITECTURAL ASSOCIATION VISITS.

ON Saturday last the members of the Association visited what was formerly the country village of Hornsey, but is now fast becoming a thickly-populated suburb of the metropolis. During the last five years especially, the population of the parish of Hornsey has enormously increased and the parish church of St. Mary has consequently become too small for present day requirements. To meet these requirements a new church is now in course of erection from the designs of Mr. James Brooks, which was illustrated in the *Builder* of May 12, 1888, and is now sufficiently advanced towards realisation to justify the expectation that this church will, when completed, be one of the finest in the North of London. The portion of the design which is already carried out comprises the whole of the nave and chancel with the aisles, transepts, and vestries, the tower, spire, and western porches being not yet commenced. Mr. Brooks, the architect, met the members of the Association, and, after showing them the contract drawings, the whole of which were hung up for the inspection of the visitors, conducted them over the building, explaining its chief features, and especially calling attention to the excellence and thoroughness of the work of the builders, Messrs. Rudd & Son, of Grantham. The visitors not only enjoyed the beauties of design they found in the building but were also much struck by the smallness of its cost, notwithstanding the wealth of detail and solidity of construction displayed. The walls internally and externally are entirely faced with Ancaster stone with an inner core of Portland cement concrete, while the roofs, which are wholly of pitch-pine, are Mediæval in their scantlings.

It is to be hoped that funds will shortly permit of the completion of Mr. Brooks's design, with its fine western tower and spire and flanking porches, with parish room and library over them, in which latter records of the history of the parish may find a fitting place. Of this there is much that is interesting from the long connexion of the bishops of London with the locality as lords of the manor of Hornsey, or, as it was formerly called until the time of Elizabeth, Haringey, a name still retained in Haringey-park, near Crouch-end.

The parish was also, in Mediæval times, a place of pilgrimage, owing to the fame of the curative powers of "Our Lady of Muswell." The fate of the present church has not yet been decided, though it is to be hoped that the ivy-clad perpendicular tower, which bears the arms of Savage, who was Bishop of London from 1497 to 1500 A.D., and his more eminent successor Bishop Warham, may be spared, even though the more modern church erected in 1832 be pulled down. This latter has but small interest beyond being the burial-place of Samuel Rogers, the banker-poet, who was buried there in 1855.

EDINBURGH ARCHITECTURAL ASSOCIATION.

AT a meeting of this Association, held on the 21st inst., Mr. John Wallace read a paper on "Neglected Branches of Design." He referred to the absence of beauty in most of our industrial productions, even in those closely related to architecture, such as necessary domestic fittings, grates, gasfittings, rain-water goods, wrought-iron work, furniture, and upholstery. Regret was expressed at the neglect of high-class decorative painting, and that in Scotland especially the class usually designated "artists" *par excellence* should carry their repugnance to conventional art to the verge of hostility. Brief reference was made to a largely neglected field of design in the dwellings of our working men, and even of the middle class. That was a branch of industry hardly influenced by the artistically educated members of the architectural profession, and there was small chance of improvement so long as that industry remained in the hands of jerry builders and unprincipled speculators. Hopes were expressed of the beneficial influence the forthcoming visit of the Art Congress to Edinburgh would have in strengthening the movement in favour of art as applied to industry.

On Saturday afternoon the members of the Edinburgh Architectural Association, along with a large contingent from the Glasgow Architectural Association, paid a visit to Mid-Calder House, and also to the Old Parish Church, which, through the kindness of Lord Torphi-

chen and the Rev. Mr. Gardiner, were respectively thrown open for viewing. The party was conducted over the house by Mr. J. Harrison, who sketched the history of the Sandilands family, so long connected with the house and the locality. The various apartments were examined, chief of which being that in which history relates John Knox to have dispensed the Sacrament of the Lord's Supper openly for the first time, in conformity to the practice of the Reformed Church in Scotland. Leaving the house, the party was next conducted over the Old Parish Church adjoining by Mr. Hippolyte J. Blanc. He explained that though the church now presented an edifice comprising choir and transepts, yet the only part of the original was the choir, the transepts having been added about thirty years ago. In introducing the subject of their visit, Mr. Blanc referred to the characteristic features of Scotch ecclesiastical architecture of the period, and illustrated it by well-known examples. From studying the details of the edifice it might be concluded, Mr. Blanc showed, that the church was a foundation of about the middle of the fifteenth century; but documentary evidence showed that in 1542 Peter Sandilands, then pastor of Calder Comitis, having laid the foundations of the "queir and revestrie of the Paroche Kirk of Calder," took an obligation from his nephew and grand-nephew to carry on and complete the fabric according to certain specified dimensions and style; and further, to build a nave at the west end with a steeple between it and the choir, and a "closter" on the north side of the choir, the roof of the choir to be of stone, groined in the same manner as that of "Sanct Anthonis Yle, in Sanct Gelis Kirk." Whether from lack of funds or some other cause, all that was carried out of the scheme was the choir, and even that part never had the roof completed in the manner specified. Mr. Blanc described the plan originally built as being a simple parallelogram, about 70 ft. long by 23 ft. wide, having a polygonal termination at the east end. Abutting upon the east end is the vestry, which seems to have been provided for by the founder to enclose the family vault which is underneath. Externally the south front is divided into two wide bays with heavy buttresses, which latter are also repeated on the angles of the apse, though not on the north side. The lighting is by means of large four-light windows, each occupying nearly the whole surface of each bay on the south side only, the mullions in each case branching out into the pear-shaped loop tracery so characteristic of Scottish ecclesiastical architecture of this period.

CASE UNDER THE METROPOLITAN BUILDING ACTS:

OPENINGS FOR LIFTS IN FIREPROOF FLOORS.

MESSRS. SANDON BROTHERS, 79, Mark-lane, E.C., were summoned before Mr. Vaughan, at Bow-street Police-court, on March 13, by Mr. C. F. Hayward, District Surveyor of St. Giles's, Bloomsbury, for that they, being engaged in the erection of Tavistock Residential Chambers at the corner of Hart-street and Museum-street, Bloomsbury, "did erect separate sets of chambers not wholly divided horizontally by fireproof floors," also "did omit to continue the fireproof floors through spaces left for small lifts in sculleries of each floor." Mr. Hayward conducted his own case, and the defendants were represented by Mr. Morten, barrister, instructed by Mr. T. A. Jones, solicitor, of 79, Mark-lane.

Mr. Hayward contended that the openings formed in the floors to allow of the passage of the lifts were a contravention of the Act, part I., sec. 27, subsec. 2, which shortly says:—"That separate sets of chambers, tenanted by different persons, shall, if contained in a building exceeding 3,600 super. feet in area, be divided vertically and horizontally by party-walls or fireproof floors." His objection was on the ground that there was a risk of fire being communicated from floor to floor up the lift.

Mr. Hayward was cross-examined by Mr. Morten to show that though the area of the whole buildings was 4,700 ft., they were divided vertically by party-walls, and that the area of each building was under 3,600 ft.

Mr. Vaughan, having inspected the plans, said he thought there was only one building, but indicated to Mr. Hayward that he was not satisfied that the rooms adjoined, and decided to adjourn the hearing of the case for a week, so as to give him an opportunity of inspecting the premises, and gave instruction that Mr. Hayward and Mr. W. Seckham Witherington, the defendant's architect, should attend him at the view.

Mr. Vaughan having duly inspected the premises, the case came on for hearing again on the 20th inst., when Mr. Hayward used arguments in support of his contention.

Mr. Vaughan, without calling for any evidence on behalf of the defendants, said that, having carefully inspected the premises, he was of opinion that, if there were any risk from fire, it was, from the position of the lifts (which were placed at the extreme ends of the buildings), reduced to an absolute minimum, and that, as the lifts were not either "chambers or rooms" within the meaning of the Act, the summons must be dismissed.

SOME ESSEX CHURCHES.

SIR,—Mr. Corder's brief reference to Aveley Church, in your issue of 23rd inst. [p. 225], serves to remind us of the fact how little Essex churches are known or appreciated, although, it is true, this county cannot boast of any very grand or important ecclesiastical buildings. Still, many of its remote village churches are not only of great antiquity, but of considerable ecclesiological interest. More especially is this the case in the valley of the Thames, a district to which, as Mr. Corder remarks, stone could be easily transported. In the more central parts of the country this material was less easily procured, as the massive brick towers of Ingatestone, Fryerning, Billericay, the two Theydons, &c., testify.

The church at Aveley is of much greater age than is indicated by the sketch given in the issue referred to above, the southern arcade of the nave being of Early Norman date, with massive square piers, while the northern arcade is of later style, with pointed arches of perhaps the second half of the thirteenth century, to which period much of the chancel probably belongs. There are some very fair brasses preserved in the church, one dating from 1370, but externally the building is of little interest. Traces of Norman work are very common in the village churches of the district, a notable example is at Rainham, where the Norman interior, with its two arcades, *circa* 1135, remains practically unaltered, while the tower is mostly of the same date, but cased and buttressed at some more recent period. Then there are Norman doorways still remaining at Stifford (of a rude and early type), Orsett, South Ockendon (a fine example of the later Norman style), North Ockendon, &c., while at Little Thurrock the church,—recently restored,—is of Norman foundation, and retains its original chancel arch; West Thurrock church, too, displays considerable mixture of styles, a large part dating from the thirteenth century, and as the churchyard of this parish is partly bounded by the sea-wall, it affords us tolerably good proof of the fact that the work of embanking the Thames must have been completed, in this locality at least, prior to the period mentioned.

I hope Mr. Corder will give us some more of his "Wayside Notes." I, for one, shall look forward with interest to the next instalment.

London, March 25. R. B.

NORMAN BRACKET IN EYNSFORD CHURCH.

SIR,—While last week at Eynsford Church (in Kent, and but a few miles from London), I met with a very remarkable and interesting feature, for the presence of which I can, I think, offer a fairly reasonable suggestion.

The object in question is a stone bracket of Norman date, projecting from the south wall of the chancel, some few feet west of the chord of the apse, and at about 7 ft. from the floor. Through this bracket is drilled vertically a round hole of about 1 in. in diameter, having its upper edge worn away in small channels to the north, apparently by a string or cord. Now, it seems to me that we may have here the perhaps unique example of a bracket through which hung down the cord used for the Lenten veil, and the following quotations go far, I think, to support this view:—

". . . . From the preceding Saturday also until the Wednesday before Easter Day, a veil shall hang in the presbytery between the choir and the altar, which should be let down throughout Lent on week-days, when it is the ferial office, except whilst the Gospel is being read."—Register of St. Osmund of Salisbury, Rolls Series, p. 171.

Our bracket is some distance to the west of the apse, and between the piscina and choir proper.

". . . . where, as we know from the winch remaining, the Lenten veil hung."—Canon Jones, "On the Original Position of the High Altar at Salisbury Cathedral," "Wiltshire Archæological and Natural History Magazine," vol. xvii., 1877.

The only notice of the Eynsford bracket with which I am acquainted is the following, from the first volume of the Transactions of the St. Paul's Ecclesiological Society:—"In the south coign of the entrance to the apse there are two stones with Norman carving. One forms a projecting bracket, perforated with a large round hole, such as might be used to hold a candle, or many other things." Had the bracket been for the support of a candle it would not, I think, have been perforated, but the hole would have been sunk only sufficiently to form a socket. The root of the question seems to me to lie in the fact of the channels worn in the edge, to see which it is necessary to attain some slight elevation, which probably the writer of the above (a very kind and able man) did not attempt.

Certainly the bracket may have been for the passage of the cord for the light hanging before the Host, or connected directly with the suspension of the Host, though for the latter purpose it is probably too far west. I think, however, that such evidence as we have is in favour of a connexion with the veil. HENRY LITTLEHALES.

Clovelly, Bexley Heath.

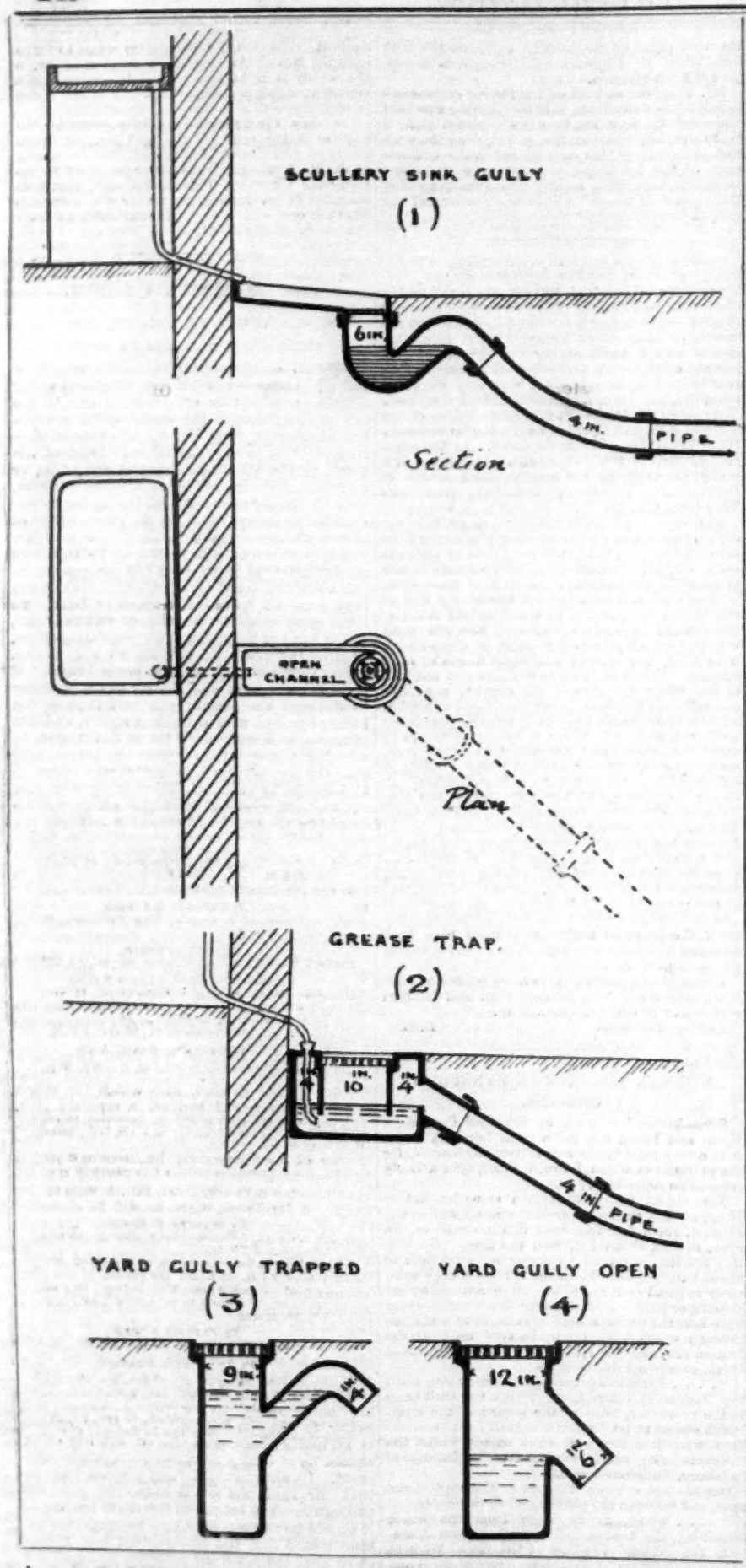
The Student's Column.

TOWN DRAINAGE.

XIII.—SEWAGE INLETS TO DRAINS.

ALL drains should terminate outside a house or any building inhabited either regularly or occasionally, except the one prolongation of the drain which conveys the air-current from the inlet to the outlet,—from, that is to say, the inlet in front of the house to the ventilating-pipe at the back; or reversely, if so determined in a particular case, from the inlet at the back of the house to the ventilating-pipe at the front. No other portion of a drain should terminate inside a house, notwithstanding that a trap be placed at its end with the intention of preventing foul air passing it. Many such traps and terminations still exist, but they must all be altered sooner or later, and there must be one outlet only, of sufficient size, at the head of the drain. Two ventilating-pipes, or air-outlet pipes, do not act so well as one, unless they are both of the same height. If there is more than one the air has a tendency to descend the shorter one and ascend the higher one, but it is a tendency only, and not effective in itself, while its action interferes with the course of the air from the proper inlet near the ground level, to the proper outlet as high as can be procured. There being then only one ventilating-pipe to each house-drain, its size should be almost, if not quite, as large as the drain itself; at least the ventilation is facilitated by making it so, and, seeing how slight the forces are with which we have to deal in this matter, it behoves us to afford every facility for so important a part of the work, and not to check the natural course of the air through the drains by offering to it the obstruction of a small pipe. For the same reason there should be as few bends as can be in the ventilating pipe, and none abrupt; and, moreover, care should be taken not to place anything upon the open end of the pipe which would obstruct the free outlet of air.

Every other branch of the drain terminates outside the wall, where a gully is placed at the surface of the ground, into which the waste water is discharged through a separate pipe. The gully is covered with an iron grating, and, in the case of the gully which receives the discharge of a scullery-sink, the discharge should be above rather than below the grating, a short open channel conveying it from the wall to the gully. A lead pipe, of at least 1 in. diameter (better larger), conveys the refuse of the sink through the wall. This, though unconnected with the drain, should have a bent trap immediately under the sink, as the sides of the pipe become foul and will emit a smell into the house unless thus trapped. Solid matter will accumulate in the bottom of this trap, but it can be removed occasionally through a hole in the pipe underneath, the hole being closed by a plug screwed in, but so as not to project inside the pipe. Proper traps of this kind are made ready to be joined above and below to the lead pipe. The gully outside is of earthenware, and for a scullery-sink should be of such a form as not to retain sediment. Its outlet should form a water-trap, so that air from the drain may not pass out through it. The branch of the drain leading to it should be as short as it can be made, for the same reason that the intercepting trap should be as near the sewer as possible, viz., that the air in that length must remain almost without movement, and it is only by slow diffusion that this stagnant air becomes mixed with the air current of the main portion of the drain, and so carried away to the outlet. These gullies are made 6 in. and 9 in. diameter, and some larger. They are also made square at the top—6 in. and 9 in. square inside—but round ones are better where it is required to turn the outlet in a direction oblique to the line of wall, and especially with branches so short as some of those



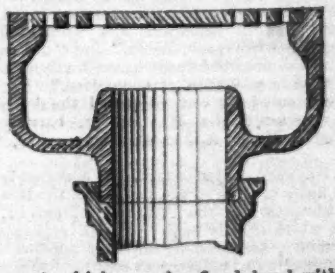
shown on the sketch-plans of the small houses in the article No. XI., and in some other situations yet to be referred to. The outlet of a scullery-sink gully is 4 in. diameter, and when the 4 in. branch to it has been laid nearly up to the gully, a bend pipe is turned upwards to receive the outlet. The depth of the drain sometimes requires that a straight pipe be inserted between the bend and the gully, or more than one, but the laying of the drain and branch should be managed so as not to require these.

The surface of an open space of ground at the back of a house is formed with a slight inclination downwards to the gully which carries off the rain-water. This lowest point of the surface may sometimes be at the place where the scullery sink-gully is required to be placed, but this brings all the surface water towards the house. The gully for carrying off the rain-water falling upon the open space is better placed farther away, either in the centre, if the area be large, or at the far side for small areas. This gully should be of different form to that which is proper for a scullery-sink gully, which receives no heavy kind of dirt, while the yard gully receives sand and other heavy dirt which concretes upon the bottom of the drain and is difficult to move along with the sewage: moreover, its delivery into sewers is objectionable. This gully should, therefore, be deeper and larger than other gullies. It resembles a street gully in catching heavy dirt. Where the ventilating-pipe is placed at the head of the drain at the back of the house this yard-gully should form also a trap to turn the current of air in the drain in the appointed direction (fig. 3). The outlet of this gully should be 4 in. diameter. When the position of the ventilating-pipe is reversed, and placed at the front of the house, the yard-gully should not be trapped, but formed to admit air freely to the drain (fig. 4). Its outlet should be 6 in. diameter, or of the full size of the main portion of the drain, and the aggregate area of the openings between the bars of the gratings should be 40 square inches.

With regard to the form of gully for a scullery sink, it should first be determined whether it is necessary to form with it a grease-trap. This is necessary in the case of large houses, but not in small ones, where fat is not so much wasted. Fig. 1 shows a common form of gully for these, which is sufficient, but if the gully is to catch and retain the fat discharged with the hot waste water from a scullery or kitchen sink of a large house, it is necessary to provide a middle space, as in fig. 2, in which the water is maintained in a quiet state to enable the fat to rise to its surface, and to contain such a body of water as to allow the hot water discharged from the sink to be sufficiently cooled to enable this separation to take place. Any large quantity of grease discharged freshly into a drain is objectionable; if it remain long enough in the gully to become broken up and altered in character, it is less so; but, on the whole, it is better to retain it in the gully and remove it from time to time.

The rain-water pipes from the roof should not be connected with the drain, but should deliver the water on the surface of the ground, or directly into a gully-trap. If they are connected with the drain they prevent the proper action of the ventilating-pipe erected for the special purpose of ventilation, whether it be a special pipe or the soil-pipe of a water-closet, besides having a tendenoy to bring up and discharge foul air near the upper windows. Where the open area of ground at the back of a house is small the rain-water gutters of the roof should be laid so as to deliver the water as near the head of the drain as can be, conveniently; but if this be not so the water may run over the surface to the yard-gully in the lowest position, if it be a paved area.

*** In reference to the construction of air inlets in a roadway, mentioned in a former article, our attention has been drawn to the form of inlet patented by Mr. Cregheen, Surveyor to the Bromley Local Board, of the section shown



in the cut, which can be fixed level with the roadway, dirt or stones falling in being caught in the pan round the pipe-head.* It is fitted with a hinged lid and a lock, for cleaning.

Lifts.—The new buildings for the Liverpool Royal Infirmary, which are being erected from the designs of Mr. Alfred Waterhouse, R.A., are to be fitted with three hydraulic lifts, viz., a direct-acting hydraulic passenger-lift for conveying patients in their beds, a dinner-lift, and a goods-lift for the administrative block. Mr. Waterhouse has placed the execution of the contract in the hands of Messrs. R. Waygood & Co., of London.

* Made by Messrs. Stone & Co., Deptford.

Books.

Lockwood's Builders' and Contractors' Price-Book for 1889. Edited by FRANCIS T. W. MILLER, A.R.I.B.A. (London: Crosby Lockwood & Son.)

THIS useful work quite keeps up its reputation for careful preparation and comprehensiveness. As usual in manuals of this class, the prices are liberal, and will bear considerable discount for average work. The short essays on construction are, in the main, well done and trustworthy. It is impossible to keep them quite free of controversial matter, and there are those who think the praises of concrete building too loud, and that much might be written *per contra*. One should not, perhaps, look for literary style in books of this description, still a little care would avoid such ambiguities as the following:—"The value of drains and sewers should be ascertained by their *solid contents*."

In one or two points the information has not been brought down to date, *e.g.*, the late Mr. Vulliamy's name occurs as the architect to the now defunct Metropolitan Board of Works,—in some cases it is not quite accurate, *e.g.* (apropos of the Doulting stone), Ilminster is not in Wiltshire but in Somerset, and the Doulting stone is not found near Ilminster, but near Shepton Mallet, also in Somerset.

A more important matter is the omission to state the prime cost upon which the list of copper articles is based. The editor remarks that the price varies. It does, indeed!

The Proposed Railway Classifications, with Comparative Tables of Maximum Rates and Charges. By M. B. COTSWORTH. London: Waterlow & Sons. Price 2s. 6d.

THIS is precisely what was required to complete the work on this subject by Dr. Hunter, noticed in our issue of the 9th inst.,—in fact, it might almost be regarded as an appendix thereto. Here we have the proposed classification alphabetically arranged, and compared with that of the Railway Clearing House, all deviations being apparent at a glance. This is followed by a series of elaborate tables, by which the charge proposed by each company, under any class, and for any distance, can be readily ascertained. The fact that such a table has been compiled,—and that within a week or two of the publication of the classifications and schedules,—speaks volumes for the value of the new Act in this particular respect. It had hitherto,—under the old Acts,—been simply impossible.

Probably with a view of saving time, the rates have been lithographed; but the figures are clear and bold, and the work is well executed. Of course, the present proposals are liable to alteration; but, when finally settled, a set of tables on similar lines will be of still greater service.

The Patents, Designs, and Trade-Marks Acts, 1885 *to* 1888; *consolidated.* With an index. By LEWIS EDMUNDS, Barrister-at-Law. London: Stevens & Sons; 1889.

THIS is a reprint in large type, and with a sufficiently durable binding, of the original text of the Act of 1883, the repealed portions printed in italics, and the additions and alterations added in large type, and the text of the amending Acts of 1885, 1886, and 1888, has been added in the appropriate places, so that, as the editor says in his preface, "the principal Act has written into it all the amendments now in force," and the reader has the existing law on the subject collected in a convenient and compact form. A very copious and detailed index is added, and the book will be a very useful consulting volume for those who have practical occasion to make themselves acquainted with legislation on patents and trade-marks.

New Theatre at Coventry.—The New Royal Opera House, at Coventry, was opened on Monday last. We gave a brief description of the building in the *Builder* for September 22 last (p. 220). The internal decorations, which have been carried out by Messrs. Goodall & Co., of Liverpool, from the designs of the architects, appear to have given much satisfaction. The circular ceiling is dome-shaped, and divided into compartments and panels, with richly decorated and moulded ribs, each panel being filled with modelled designs. The architects are Messrs. Essex & Nicol, of Newhall-street, Birmingham, and Mr. Gray Hill, of Coventry, was the contractor for the buildings.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

4,525, Endless Band-saw. F. Parker.

Between the two large pulleys of an ordinary machine, on which the endless band-saw or knife runs, the inventor places a third pulley, coned or tapered on the edge, revolving on its own shaft and forced against and between the two large pulleys by means of a screw, a spring, or a weight. This third centre pulley reduces friction in the bearings of the two larger ones.

4,526, Pneumatic Apparatus for Dressing Stone. J. Mann.

Instead of the ordinary reciprocating movement only being used, a rotary motion is by this invention imparted to the cutter by mechanical means. The spindle and tool-holder reciprocates and revolves, but if it should be desired to cause the tool to reciprocate without revolving, a feather or catch is withdrawn, and leaves the spindle unrestrained.

4,782, Window-fasteners. W. K. Booth.

According to this invention, a lever or hasp, somewhat similar to the ordinary fastener, is employed, such lever being centred either upon the frame of one of the sashes, or upon the fixed window or door frame, and sweeping over a portion of the other sash. At its free end the lever carries a screw, the outer end of which is formed with a suitable thumb-nut or milled head. The bracket against which the screw abuts is formed with a suitable slot, into which the lever enters when swung into position for fastening, and it may have a recess into which the end of the screw shall enter when it is rotated in the direction for fastening the sash. The action is that when the window or door is closed, the lever is swung into position over the sash, and the screw immediately tightened down, when the sash or door is drawn close to its companion sash or to its frame, thus excluding draughts and preventing rattling.

5,881, Manufacture of Cement. A. McAra.

This invention has for its object the hastening of the cooling or maturing process, the cement being passed through apparatus specially designed, and also to produce an improved cement by admixture with the ordinary materials of a proportion of carbonate of lime, either while the cement is passing through the cooling-machine or before or after such passage. The cooling apparatus consists of a cylinder or trunk within which is a series of shelves, each shelf having in it a series of holes inclined downwards from the circumference of the cylinder towards the centre. Through the centre of the cylinder passes a pipe which is perforated, and through which passes a constant current of air.

1,123, Improvements in Fire-grates. W. H. Prestwich.

In order to fully radiate the heat, a number of louvres are, according to this invention, placed at the back of the stove, which louvres may be opened or closed at will. A ratchet motion controls the opening and closing. A permanent opening is formed up over the back of the stove to carry off the smoke and products of combustion.

NEW APPLICATIONS FOR PATENTS.

March 11.—4,220, W. Smith, Sewer and House Drain-traps.

March 12.—4,269, R. Wyatt, Silent-action Ball-valve.—4,283, F. Hayward, Wedge-block to keep Pan-tiles rigid on Roofs.—4,285, G. Marsden, Ornamental Tiles, Bricks, &c.—4,286, J. Winskill, Jun., Kiln for Burning Limestone.—4,326, J. Fryer, Extracting Cowl or Ventilator.—4,346, W. Popplewell, Saw-sets.—4,347, J. Homan, Fire-proof Structures and Bricks for same.

March 13.—4,378, F. Abbey, Fireplace and Chimney.—4,392, T. Cooper, Fireproof Floor or Roof Construction.—4,395, R. Busse, Ventilating Buildings.

March 14.—4,432, W. Ingle, Hanging Sliding Window-sashes.—4,434, A. Guerra and D. Steffano, Door-fasteners.—4,436, W. Prideaux, Window-fasteners.—4,437, W. Prideaux, Screws.—4,495, T. Houghton, Chimney-pot, &c.

March 15.—4,522, T. Page, Glazing-bars for Roofs, &c.—4,524, C. Shewbrooks, Weather-proof Combination Tile, &c.

March 16.—4,638, F. Lane, Sawing Machinery.—4,648, W. Dunn, Fire-grates.—4,650, W. Hes, Decorative Compositions.

PROVISIONAL SPECIFICATIONS ACCEPTED.

1,281, A. Hewson and S. Bradley, Window-sash and Casement Fastener.—1,952, J. Merryweather, Paving.—2,134, H. Enoch, Water-waste Preventers for Water-closets, &c.—2,365, J. Kerr, Stencil-holder for Painters and Decorators.—2,520, W. Davidson, Eaves Gutter Hooks, &c.—2,526, J. Taylor, Binding Bricks for Hollow Walls, &c.—2,530, C. Hickton, Cupboard Door Fastener.—2,602, A. and J. Gilbert, Chimney-pots.—2,798, J. Stansfield, Machines for Mixing Concrete.—2,817, W. Laycock, Opening, Closing, and Securing Window-sashes, &c.—2,827, W. Williams, Wood Paving.—2,883, T. Harries and J. Dougall, Machine for Grinding and Polishing Marble, &c.—3,017, F. Baker and I. Cohen, Cupboard and Door Fastenings.—3,063, J. Thompson and J. Kirby, Cup-and-ball Gas-joints.—3,265, J. and W. Catterall, Fire-grates.—3,563, H. Lord, Water-closets.—3,580, F. Berry, Electric Bell or Gong.—3,668, T. Salter, Flushing Apparatus, &c.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

6,422, J. Freebury, Decorations in Stone and Marble.—6,690, H. Buignet, Testing Cements, &c.—6,759, P. Lucas, Step-ladders.—6,965, J. Brindley, Gully-traps.—7,132, G. Lock, Air Inlet for Ventilating Drains, &c.—7,190, J. Cropper, Flushing Water-closets.—7,288, J. Phillips, Gullies and Drains.—7,732, F. Lancaster and E. Nixon, Emergency Doors for Theatres, &c.—13,839, W. Dickson and R. Barr, Stoves, &c.—17,752, W. Millar, Floor Ventilator.—2,049, H. Young, Machine for Cutting Stone, &c.—2,547, E. Lisle, Chimney-cowl.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

[*Contractions used in this list.*—"g.r." for "ground-rent"; "yrs." for "years"; "st." for "street"; "rd." for "road"; "sq." for "square"; "pl." for "place"; "ter." for "terrace"; "yd." for "yard," &c.]

MARCH 18.—By GLOVER & HARRISON.

Camden Town—37, Lyme-st., 51 yrs., g.r.	£360

By E. WOOD.

Peckham—4 and 5, Hazel-ter., 73 yrs., g.r. £11. 8s.	410
5, Langdale-rd., 68 yrs., g.r. £5. 5s.	315
Bermondsey—340 to 350 even, Southwark Park-rd., 54 yrs., g.r. £35	805
Norwood—14 to 32 even, Cambridge-rd., freehold	2,010
Bloomsbury—19, North Keppel-mews, 12¼ yrs., g.r. £6, 12s.	230
Clapton—28, Thistlewaite-rd., 94 yrs., g.r. £6. 6s.	375
Fulham—32, Fulham Park-gardens, 60 yrs., g.r. £7	315
Waterloo-road—24, Oakley-st., 34 yrs., g.r. £10	285

MARCH 19.—By PROTHERO & MORRIS.

Manor Park—3 to 9, Elizabeth-ter., 99 yrs., g.r. £4	560

By C. G. COLES & CO.

Bayswater—An improved ground-rent of £22, term 43 yrs.	410

By HENRY & LATCHFORD.

Clapham—63, Manor-st., freehold	485
1, Caroline-pl., 70 yrs., g.r. £1	400
Chelsea—111, Sydney-st., 20 yrs., g.r. £12	690
Stockwell—57 and 59, Wellington-rd., 56 yrs., g.r. £10	400

By G. BAINBRIDGE.

Notting Hill—72 and 78, Silchester-rd., 75 years, g.r. £12. 2s.	405
Ruislip—Two copyhold cottages	150

By CHARLES & TUBBS.

Old Kent-road—27 to 49 odd, King Arthur-st., 68 yrs., g.r. £46. 3s.	1,685

By MR. TYRRELL.

Ponder's End—1 to 4, Dunning-ter., 82 yrs., g.r. £17	800

MARCH 20.—By G. FRANCIS & SONS.

Holloway—40 to 48 even, Wellington-rd., 55 yrs., g.r. £30	1,490
9, Hollingsworth-st., 56 yrs., g.r. £6	305
Canonbury—98, Northampton-st., 28 yrs., g.r. £4	275

By FAREBROTHER, ELLIS, & CO.

Ealing—Broadway, a plot of land, 5 a. 0 r. 36 p., freehold	3,000
Warwick-rd., Kerrison Lodge, freehold	800
Two plots of freehold land, 2 a. 2 r. 14 p.	1,300
The Park, grd-rents of £15. 6s., reversion 56 yrs.	340
The Park, ground-rents of £13. 13s. 10d., reversion 60 yrs.	330
The Park, grd-rents of £46. 10s., reversion 62 yrs.	1,075
The Park, ground-rents of £3, reversion 58 yrs.	70

MARCH 21.—By DYER, SON, & HALTON.

Lee—16, Dorville-rd., 86 yrs., g.r. £10	770

By WALKER & RUNTZ.

Gray's-inn-road, Elm-street—A plot of freehold land, area 20,700 ft.	5,700
The letting on lease for 80 yrs. of 20 plots of land, area 27,567 ft., at £1,071 per annum.	
Hampstead, Heath-street—The letting on lease for 80 yrs. of 4 plots of land, area 5,369 ft., at £237 per annum.	

By FLEURET & SONS.

Regent's-park—66, Robert-st., 34 yrs., g.r. £7	437

By NEWBON & HARDING.

Barnsbury—56, Ellington-st., 63 yrs., g.r. £9	415
Islington—35, William-st., 57 yrs., g.r. £5	210
"The Islington Club," freehold	1,000
Camden-road—166, Brecknock-rd., 80 yrs., g.r. £12	360
Kingsland-road—No. 513, term 24 yrs., g.r. £24	650
Hornsey—1 and 4, Church-lane, 98 yrs., g.r. £18	1,025

MARCH 22.—By R. & S. SMITH.

Clerkenwell—35, 37, and 39, Warner-st., freehold	1,325
41, Warner-st., freehold beer-house	620
King's-cross—43 and 45, Wicklow-st., 66 yrs., g.r. £14	425
Pentonville—23, Baker-st., 19 yrs., g.r. £18	105

By F. J. BIBLEY.

Bermondsey—12, Keeton's-rd., 51 yrs., g.r. £5	270
56 and 58, Keeton's-rd., 57 yrs., g.r. £8	545
22, Tranton-rd., 57 yrs., g.r. £5. 10s.	305
Rotherhithe—9, Thetford-pl., freehold	95
7, Rebecca-ter., 71 yrs., g.r. £4	270
57, Hawkstone-rd., 61 yrs., g.r. £3. 10s.	230
29, Irwell-pl., freehold	105
39, 41, and 43, Rixton-st., freehold	315
91, Clarence-st., freehold	200
17, Love-lane, freehold	265
3 and 4, Love-lane, freehold	400
Deptford—94, Windmill-la., 73 yrs., g.r. £4	230

MEETINGS.

SATURDAY, MARCH 30.

Royal Institution.—The Right Hon. Lord Rayleigh, M.A., F.R.S., on "Experimental Optics (Polarisation: Wave Theory)." VI. 3 p.m.

MONDAY, APRIL 1.

Surveyors' Institution.—Mr. G. Beken on "The Rating of Ground-Rents." 8 p.m.

Society of Engineers.—Mr. G. M. Lawford on "Fire-proof Floors." 7.30 p.m.

Clerks of Works' Association (Carpenters' Hall).—Annual Meeting. 8 p.m.

Royal Institution.—General Monthly Meeting. 5 p.m.

Society of Arts (Cantor Lectures).—Mr. C. V. Boys, F.R.S., on "Instruments for the Measurement of Radiant Heat," II. 8 p.m.

TUESDAY, APRIL 2.

Builders' Clerks' Benevolent Institution.—Annual Dinner, Holborn Restaurant. 6 p.m.

Institution of Civil Engineers.—(1) (Further Discussion on Dr. C. E. Emery's Paper on "The District Distribution of Steam in the United States." (2, time permitting), Sir Nathaniel Barnaby on "Armour for Ships." 8 p.m.

Society of Arts (Foreign and Colonial Section).—Mr. F. K. Smythies on "The Argentine Republic." 8 p.m.

Society of Biblical Archæology.—8 p.m.

Sanitary Institute (Lectures for Sanitary Inspectors).—Mr. S. F. Murphy, on "Infectious Diseases and Methods of Disinfection." 8 p.m.

Glasgow Architectural Association.—Mr. J. A. Campbell on "Neo-Greek Architecture."

WEDNESDAY, APRIL 3.

British Archæological Association.—A paper prepared by the late Mr. J. Brent, F.S.A., will be read on "The Burial Customs of the Nations of Antiquity." 8 p.m.

Civil and Mechanical Engineers' Society.—Mr. J. Bateman on "The Roadstones of Somerset and Wilts." 7 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary Meeting. 8.30 p.m.

THURSDAY, APRIL 4.

Royal Institution.—Professor J. H. Middleton, M.A., on "Houses and their Decoration from the Classical to the Mediæval Period." III. 3 p.m.

Royal Archæological Institute.—(1) Rev. Precentor Venables on "A Silver Chalice and Paten, and Gold Ring lately found in the Tomb of Bishop Sutton at Lincoln." (2) Mr. J. Bain on "Fougères and its Lords, a reminiscence of Feudal Brittany." 4 p.m.

Society of Antiquaries.—8.30 p.m.

Edinburgh Architectural Association.—Dr. Joseph Anderson on "Celtic Art and Architecture in Scotland." 8 p.m.

FRIDAY, APRIL 5.

Architectural Association.—Mr. Lacy W. Ridge on "Sussex and its Architecture." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Inspectors).—Mr. J. F. J. Sykes, B.Sc., on "General Powers and Duties of Inspectors of Nuisances: Method of Inspection." 8 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. R. J. Durley, B.Sc., on "Moulding and Casting Cylinders for Marine-Engines." 7.30 p.m.

SATURDAY, APRIL 6.

Association of Public Sanitary Inspectors.—Mr. C. MacMahon on "The Selected Candidate."

Royal Institution.—The Right Hon. Lord Rayleigh, M.A., F.R.S., on "Experimental Optics (Polarization; Wave Theory)." VII. 3 p.m.

Miscellanea.

Roath Park, Cardiff.—The Corporation of Cardiff recently offered a premium of 75*l.* for the best design for laying out 130 acres of land, which the Marquis of Bute has presented to the town of Cardiff for a public park. The Parks Committee have awarded the premium to the plans sent in by Messrs. William Barron & Son, Landscape Gardeners, Borrowash, near Derby. The site of the proposed park is a valley nearly two miles in length, with a considerable stream running through it, which will be utilised by Messrs. Barron & Son in the formation of a lake about thirty acres in extent, besides numerous smaller lakelets and waterfalls. Ample provision has been made for outdoor games, such as cricket, football, lawn-tennis, bowls, archery, &c., and an open-air swimming-bath and gymnasium are also provided. Designs are also furnished for a large refreshment pavilion, lodges, greenhouses, band stands, rustic shelters, &c. The approximate estimate of cost is 11,551*l.* 15*s.* 9*d.* This sum does not include fencing, the formation of the large lake, nor the roads surrounding the park, which items will be let in a separate contract.

The New Factory and Offices for Messrs. Francis & Co., engineers and revolving shutter and brass shop-front manufacturers, were opened last Monday, on which occasion a large party of friends and customers dined at Wood's Hotel, Furnival's Inn. The building occupies a prominent position on the east side of Gray's Inn-road, near the site of their old factory, burnt down some five years ago. The building occupies a ground-space of 6,200 ft., and is four floors high. It is executed in red Suffolk brickwork with Portland stone dressings, the window openings being fitted with Elsley's iron casements. Mr. B. E. Nightingale, of Albert Embankment, carried out the works, from the designs and under the superintendence of Mr. Walter Graves, A.R.I.B.A., Mr. Buckle acting as clerk of works.

New Method of Hollow Building.—A Scandinavian architect, Herr J. Grude, writes as follows in a Danish contemporary on a method of hollow brick wall building in vogue in Denmark:—"In order to save materials, and prevent the penetration of moisture to the inner surface of walls, it is generally known that the custom has prevailed of making the walls hollow, the inner and outer brick wall being separated by a few inches, and connected at certain intervals by bonding stones. However, this mode of building does not entirely obviate the difficulty referred to, the binding stones often acting as moisture conductors, although in a much smaller degree than the solid brick wall. To overcome this drawback, and isolate the outer and inner wall completely, Danish builders some years ago hit upon the idea of using steel wire frames for connecting the walls, and which has proved most effective. The mode of building is as follows: The brick walls of the building having been well isolated from the stone foundations by means of a layer of asphalte or felt, the inner, as well as the outer, wall is built up of half-bricks, with a space between of from 4 to 6 in. The thickness of the wall will thus be from 13 to 15 in. Then, at every third layer of bricks with a horizontal distance of four bricks, or 3 ft., a row of steel wire cube-shaped clamps are inserted, which, however, must not be closer to either wall than 1 to 1½ in. The clamps are pressed into the soft mortar by the overlying bricks, and thereby become fixed between the walls. In this manner an unbroken stratum of air is left between the two walls, and, as the steel wires do not act as moisture conductors, the inner wall is for all practical purposes isolated. For the making of the clamps galvanised steel wire, from 3 to 4 mm. in thickness, is used, the wire being formed into a cube by being twisted around wooden pegs at each corner, the latter being drawn out subsequently."

The English Iron Trade.—Although in the past week the English iron market has not, on the whole, been displaying the same amount of activity noticed recently, its tendency is still upwards. Pig-iron generally is quieter, makers being mostly well sold forward. They are, in consequence, stiffer in their prices, and some further advances are noted this week. Scotch makers, in a few instances, are quoting higher; Cleveland pig has been put up a trifle; Lancashire, Derbyshire, and Lincolnshire irons are from 6d. to 1s. dearer; while Bessemer descriptions, in which trade continues very brisk, is quoted about 1s. a ton more, with a further upward move within sight. Old materials are partaking of the rise in pig-iron. Manufactured iron is in very pressing demand in Scotland and the North of England, and prices may be given as 2s. 6d. a ton in advance of those quoted last week. There is an increasing weight of business coming forward in Lancashire. The inquiry for tin-plates is fairly good, and the market is tolerably firm. There is even more pressure in steel than in finished iron, and works can scarcely meet the call there is for the material. Steel boiler-plates have been advanced another 2s. 6d. a ton in Scotland. Shipbuilders are now doing about a maximum of work, but there are fewer fresh inquiries. Engineers continue very busy, but ironfounders are slacker.—*Iron.*

St. George's Church, Lisbon.—This church, which has been rebuilt after its complete destruction by fire three years ago, was consecrated on Sunday, the 17th inst., by the Bishop of Gibraltar, the Diocesan. The building, which is cruciform, and in the Romanesque style, has a semicircular apsidal chancel, lighted by three lancet windows, and covered by a wagon roof. The nave and transepts have high-pitched open woodwork roofs, and are lighted by thirty-three windows, sixteen of which have double lights and graceful stone tracery. A peculiar feature of the western front is a projecting baptistery, faced by three stories of pillared arches. On each side of it stands an open cloistered porch, and the corbelled arcading above the baptistery is pierced by a massive wheel window contributed in 1887 as a memorial of the Queen's Jubilee. The stained windows and the many variegated marbles with which the interior is enriched, and almost all the fittings other than the benches, were contributed by individual members of the congregation. The total cost has been within a fraction of 10,000*l.* Messrs. Medland & Powell were the architects.—*Times.*

British Archæological Association.—At the meeting held on Wednesday, the 20th inst., Mr. Allan Wyon, F.S.A., in the chair, it was announced that the annual congress would be held at Lincoln at the end of July, and that the Earl of Winchilsea and Nottingham had been elected President of the meeting. Various exhibitions were made, among which may be noted an interesting example of Roman Caistor ware, belonging to Mr. Loftus Brock, F.S.A., who described its features. The first paper was by Miss Russell, of Galashiels, on the Early History of Cumbria and the etymology of the name of Glasgow, the latter being Glas = church, and gow = friend. Reference was made to some other place-names—such as Glastonbury—which have the same signification, and the "friend" was St. Mungo. It was shown that the ancient diocese of Glasgow was equal in extent to the kingdom of Cumbria, which extended to the boundary bank, the Catrail, or "battle fence" in Welsh, which was the boundary between Cumbria and Bernicia. Celtic names occur along the line of coast rather than among the hills, and it was suggested from many evidences that the Lowland Scots were of Cymric type. The second paper was by Mr. H. Syer Cuming, F.S.A. (Scot.), on "The Devil's Finger- and Toe-nails." This was an interesting chapter on folk-lore, in which many curious legends and beliefs were discussed. The well-known and common fossils, so-called, supposed to be either the shed finger- or toe-nails of the arch enemy of mankind, are popularly believed to shield their fortunate possessors from all harm.

An Automatic Window-lock.—This window-fastener which is called "Evans's Patent," presents some novelty and ingenuity. It is fixed on the side bar of the upper sash just above the meeting-rail, and not in the usual position on the centre of the meeting-rail, and is therefore more out of the way of being got at from without. When fixed it locks the window, a projecting brass bolt lying on the meeting-rail of the lower sash, so that neither sash can be moved. When it is required to open the window, a flush brass lever on the upper part of the bolt is pulled out, which pulls in the holding-bolt; but as the lower sash is lifted the meeting-rail strikes the projecting lever and sends the bolt back to its original position. When the sash is lowered the bolt, which is bevelled on the upper side and has a small roller on its outer extremity, is struck back by the meeting rail in passing, but immediately returns by the agency of a spring to its former position, holding the sash down. The same operation takes place if the lower sash be left stationary and the upper one lowered. The main point in the invention is that, on opening the window after releasing the bolt, the latter automatically sets itself in position for operating whenever the sash is closed, so that the window cannot be carelessly left unfastened. The invention has of course the inherent weakness of all mechanism which depends on the action of a spring, but so long as the spring retains its power the action is complete, and very simple and effectual for its purpose.

The "Crystal" Glass Insurance Company, Limited.—The first general meeting of the above-named company was held at the registered offices, 31, Bedford-street, Strand, London, W.C., on Friday, the 22nd inst. The Chairman, Mr. Stanley G. Bird, said that the Secretary had prepared a rough statement of the financial position of the company, which he thought the members would consider satisfactory, bearing in mind that the company had only been at work a little over two months. A considerable number of policies had been issued already, and he hoped the agents would continue to exert themselves. Mr. Herbert H. Bartlett (Perry & Co.) and Mr. Joseph Randall (Kirk & Randall) having spoken, the proceedings terminated, after some formal business had been transacted.

St. Stephen's, Vienna.—In a paragraph on January 26 of this year we referred to the state of the Church of St. Stephen at Vienna, and the necessity for repairs which had arisen, it was said, in consequence of the employment of inferior cement in certain portions of the building. From a special report of Dr. Michaelis of Berlin on the subject, it appears that the cement used in St. Stephen's was the best English Portland cement manufactured at that time, but that the cement was used neat, without sand: and Dr. Michaelis attributes to this the failure in the portions where cement was used.

Evening Classes for Plumbers' Apprentices.—A sub-committee of plumbers, appointed by the Plumbers' Company, met on the 20th inst. at the Anchor Institute, Notting-hill, to inspect the arrangements made there for holding evening classes for plumbers' apprentices, and also to consider arrangements for a general meeting of the plumbers of the Western District of London, with a view to facilitate the working of the registration system in that locality. Messrs. John Smeaton, W. H. Webb (master plumbers), and R. J. Lyne, J. Browning, and W. Firth (members of the United Operative Plumbers' Association) were present.

PRICES CURRENT OF MATERIALS.

TIMBER.	£.	s.	d.	£.	s.	d.
Greenheart, B.G. ....ton	6	10	0	7	10	0
Teak, E.I. ....load	10	0	0	13	0	0
Sequoia, U.S. ....foot cube	0	2	8	0	3	0
Ash, Canada ....load	3	10	0	5	0	0
Birch ,, ...	3	10	0	6	0	0
Elm ,, ...	4	0	0	5	0	0
Fir, Dantsic, &c.	2	0	0	4	0	0
Oak ,, ...	2	10	0	4	10	0
Canada	5	10	0	7	10	0
Pine, Canada red	3	5	0	4	0	0
,, yellow	3	10	0	5	10	0
Lath, Dantsic ....fathom	4	10	0	5	10	0
St. Petersburg	5	0	0	6	10	0
Wainscot, Riga, &c. ....log	2	15	0	4	5	0
,, Odessa, crown	0	0	0	0	0	0
Deals, Finland, 2nd and 1st ...std.100	9	10	0	11	0	0
,, ,, 4th and 3rd	6	0	0	9	0	0
Riga	7	10	0	9	0	0
St. Petersburg, 1st yellow	11	10	0	15	0	0
,, 2nd ,, ...	10	0	0	11	0	0
,, white	8	10	0	10	10	0
Swedish	9	0	0	16	0	0
White Sea	9	10	0	17	0	0
Canada, Pine, 1st	16	0	0	26	10	0
,, ,, 2nd	11	0	0	17	10	0
,, ,, 3rd, &c.	8	0	0	10	10	0
,, Spruce, 1st	9	10	0	11	0	0
,, ,, 3rd and 2nd	7	10	0	9	10	0
New Brunswick, &c.	6	15	0	8	15	0
Battens, all kinds	6	10	0	20	0	0

TIMBER (*continued*).	£.	s.	d.	£.	s.	d.
Flooring Boards, sq., 1 in., prepared, First	0	11	0	0	14	6
Second	0	8	0	0	10	9
Other qualities	0	5	6	0	7	9
Cedar, Cuba ....foot	0	0	3½	0	0	4½
Honduras, &c.	0	0	4	0	0	4½
Mahogany, Cuba	0	0	4½	0	0	6½
St. Domingo, cargo average	0	0	4½	0	0	6½
Mexican ,, ...	0	0	4½	0	0	5½
Tobasco ,, ...	0	0	5½	0	0	6½
Honduras ,, ...	0	0	6½	0	0	6½
Box, Turkey ....ton	4	0	0	12	0	0
Rose, Rio	15	0	0	20	0	0
Bahia	14	0	0	18	0	0
Satin, St. Domingo ....foot	0	0	6	0	1	3
Porto Rico	0	0	9	0	1	3
Walnut, Italian	0	0	4½	0	0	6½
METALS.						
IRON—Bar, Welsh, in London ...ton	5	5	0	5	10	0
,, ,, at works in Wales ...	4	15	0	5	0	0
,, Staffordshire, in London ...	5	10	0	6	10	0
COPPER—						
British, cake and ingot .... ton	45	0	0	46	0	0
Best selected	47	0	0	49	0	0
Australian	0	0	0	0	0	0
Chili, bars	41	0	0	42	0	0
YELLOW METAL ....lb.	0	0	6½	0	0	6½
LEAD—Pig, Spanish ....ton	0	0	0	0	0	0
English, common brands	0	0	0	0	0	0
Sheet, English	13	10	0	14	0	0
SPELTER—						
Silesian, special ....ton	17	2	6	17	5	0
Ordinary brands	17	0	0	17	2	6
TIN—						
Straits	94	0	0	0	0	0
Australian	95	5	0	0	0	0
English Ingots	96	10	0	0	0	0
ZINC—English sheet ....ton	21	0	0	22	0	0
OILS.						
Linseed ....ton	18	5	0	18	10	0
Cocoanut, Cochin	27	0	0	28	0	0
Ceylon	25	10	0	25	15	0
Palm, Lagos	24	0	0	0	0	0
Rapeseed, English pale	28	10	0	0	0	0
,, brown	27	0	0	0	0	0
Cottonseed, refined	24	5	0	0	0	0
Tallow and Oleine	19	0	0	45	0	0
Lubricating, U.S.	5	0	0	6	0	0
,, refined	7	0	0	12	0	0
TAR—Stockholm ....barrel	1	2	0	1	2	6
Archangel	0	14	0	0	14	6

CONTRACTS AND PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

CONTRACTS.

Nature of Work, or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Removal of Road Sweepings & Road Watering	Hackney Bd. of Works	J. Lovegrove	April 2nd	ii.
Kerbing, Tarpaving, Metalling, &c.	Lewisham Bd. of Wks.	*Official*	do.	ii.
Additions and Alterations to Town Hall	Leyton Local Board ..	W. Dawson	do.	xiii.
Painting Work	Whitechapel Union	*Official*	do.	ii.
Sweeping Machines	Mile End Old Town Vestry	do.	April 3rd	ii.
Boundary Wall	St. Mary (Islington) Guardians	W. Smith	April 4th	ii.
Infirmary, &c.	Dartford Union	G. H. Tait	April 8th	ii.
Extension of Buildings, Roofing, Paving, &c.	Midland Railway Co....	*Official*	do.	ii.
Supply of Materials	Wood Green Local Bd.	do.	do.	xiii.
Taking Down and Re-building part of Bridge	do.	do.	do.	xiii.
Block of Buildings, Homerton	Hackney Union	W. Barnett	April 8th	ii.
Valves, Sluices, &c.	Manchester Corporation	G. H. Hill	April 9th	ii.
Pavilion	Croydon Corporation ...	*Official*	do.	xiii.
Yellow Pine	Great Western Railway	do.	do.	xiii.
Shedding, Additions to Offices, &c.	Gloucester Rail. Carr., &c., Co. Lim.	Midland & Son	do.	xiii.
Alterations and other Works, Ravenscourt ...	Hammersmith Public Libraries Commrs. ...	E. F. Roberts	do.	ii.
Widening Railway	L. & N. W. Ry. Co. ...	*Official*	April 10th	xiii.
Granite raving	Central London School District	do.	do.	ii.
Constructing Sewers, &c. &c.	Barking Town Loc. Bd.	C. J. Dawson	April 11th	xiii.
Cooking Apparatus and Heating Dining Hall	St. Saviour's Union ...	Jarvis & Son	do.	xiii.
Sewer and Drainage Work	St. George the Martyr, Southwark	*Official*	April 16th	xiii.
Wrought-Iron Fencing	West Ham Council	Lewis Angell	April 23rd	xiii.
Engineering Works, Leavesden Asylum	Met. Asylums Board ...	*Official*	April 30th	ii.
Purchase and Pulling Down Building Mat....	School Bd. for London	do.	Not stated.	ii.
Semi-detached Villas, Accrington	Langham & Entwisle ...	J. Maden & Son	do.	xiii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Assistant Inspector of Nuisances	Wandsworth Bd. of Wks	35s.	April 8th	xviii.
Surveyor and Inspector of Nuisances	Finchley Local Board	250*l.*	April 15th	xix.

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *Noon on Thursdays.*]

BELLAGIO (Surrey).—For the erection of a bungalow, for Mr. J. H. Mackay. Mr. Walter Graves, architect, Winchester House, E.C.:—

J. R. Hunt	£1,015	0	0
J. Mansbridge*	850	0	0
Charlwood Bros.	795	0	0
A. Foster	709	0	0

* Accepted subject to conditions.

CROYDON.—For the erection of shops at Thornton Heath, for Mr. F. Austin. Mr. W. H. Woodroffe, architect. Quantities supplied:—

Evans, R. D.	£823	0	0
Hart Bros.	753	0	0
Stone & Humphreys	696	0	0
Smith, W.	653	0	0
Battley	637	0	0
G. Parker	609	0	0
J. O. Richardson	589	0	0

DEPTFORD.—For work to be executed at the Foreign Cattle Market, for the Worshipful the Cattle Markets Sub-Committee of the Honorable the Corporation of the City of London:—

	Building.	Docwo.
B. E. Nightingale (accepted)	£1,523	£950

EPSOM.—For the erection of six cottages, for Mr. J. Wyeth. Mr. J. R. Harding, architect, Epsom:—

Bentley	£1,599	0	0
Strudwick, Epsom	1,530	0	0
A. Hards, Ewell	1,454	0	0
Jeal, Epsom	1,423	0	0
Adams, Sutton	1,275	0	0
Hughes, Ashtead	1,240	0	0
Chivington, Epsom	1,238	10	0
Potter, Sutton	1,195	0	0
Skilton, Leatherhead	1,150	0	0

FINCHLEY.—For additions to Linden Villa, Friern Park, North Finchley. Mr. Thos. Durrans, architect:—

Stevenson	£350	0	0
Higgs	273	17	6
Grover & Son (accepted)	240	0	0

FOLKESTONE.—For the erection of a shop and premises in the Sandgate-road, Folkestone, for Mr. F. Austin. Messrs. Cowell & Bromley, architects:—

Falkner, London	£8,970	0	0
W. Marsland, London	8,521	0	0
J. Marsland, London	8,395	0	0
Smith, London	7,999	0	0
Castle	7,998	0	0
Denne, Walmer	7,497	0	0
J. O. Richardson, London	7,385	0	0
Parker, London	7,356	0	0
Baker, London	7,253	0	0
Brooks, London	7,200	0	0
Adcock, Dover	7,181	0	0
Prebble	7,148	0	0
Mercer	7,137	10	0
Webster	7,100	0	0
Reason	6,985	0	0
Potts	6,978	0	0
Hayward & Paramor	6,742	0	0
Tunbridge	6,727	0	0
Wallace & Sons, Maidstone	6,679	0	0
Martin, Ramsgate	6,613	10	0
Moody	6,568	0	0

FOREST GATE (Essex).—For proposed house, Godwin-road, Forest Gate, Essex, for Mr. Chas. J. Barr. Mr. W. E. Pitt, surveyor, Stratford. Quantities not supplied:—

Borrows	£405	0	0
Brand	378	0	0
Key	378	0	0
Bowles	368	12	6
North (accepted)	315	0	0

KINGSTON-ON-THAMES.—For making roads and sewers on the Bank Grove Estate, for the Lands Trading Company, Limited. Mr. H. A. Alexander, Surveyor, 72, Cannon-street, E.C.:—

W. & J. Woodham	£1,239	0	0
Woodham & Fry	1,129	0	0
W. Cunliffe	1,107	0	0
S. Kavanagh	1,097	0	0

LEE (Kent).—For alterations and repairs at "Ormsby," Dorville-road, for Mr. A. C. Palmer:—

W. H. Pritchard, London	£135	0	0
W. Bailey, Greenwich	116	4	6
J. G. Fuller, 116, Lee-road (accepted)	113	12	6

LONDON.—For the erection of a new branch in Covent Garden and Henrietta-street, for the London and County Banking Company, Limited. Mr. Alfred Williams, architect. Quantities by Mr. James Schofield:—

Aldin & Slater	£13,287	0	0
Mowlem & Burt	12,190	0	0
Holloway Bros.	12,090	0	0
Alfred Bush	11,977	0	0
William Howard	11,928	0	0
Smith & Co.	11,533	0	0
Rider & Son	11,450	0	0
Perry & Co.	11,394	0	0
William Shepherd	11,378	0	0
Peto Bros.	11,260	0	0
John T. Chappell	10,888	0	0
W. M. Dabb	10,769	0	0
James Morter (accepted.)	10,473	0	0

LONDON.—For erecting residential chambers and shops at 8 and 9, Shaftesbury-avenue, for Mr. F. Statham Hobson. Mr. H. Whiteman Rising, architect:—

Higgs & Hill	£13,110	0	0
Herman & Co.	13,074	0	0
Patman & Fotheringham	12,729	0	0
B. E. Nightingale	12,631	0	0
Mowlem & Co.	12,616	0	0
Grover & Son	12,566	0	0
Kirk & Randall	12,325	0	0
Brass & Son	11,987	0	0
Mark Patrick	11,406	0	0

LONDON.—For the erection of new business premises at Streatham, Mr. R. Crowys, architect:—

Mason	£4,995	0	0
Boyer	4,980	0	0
Carron & Son	4,900	0	0
Marsland	4,825	0	0
Holliday & Greenwood	4,777	0	3
Downs	4,733	0	0
Nightingale	4,730	0	0
Smith & Son	4,720	0	0
Cadman	4,696	0	0
Colls & Sons	4,675	0	0
Kynoch	4,643	0	0
Higgs	4,550	0	0
Rodwell	4,536	0	0

LONDON.—For the erection of proposed schools in Kitto-road, Nunhead, Surrey, for the Rev. H. Grubb and trustees. Mr. E. Hoole, architect, 100, Great Russell-street, W.C. Quantities supplied:—

Woodward	£2,179	0	0
Lathey	2,083	0	0
Williams	1,967	0	0
Higgs	1,950	0	0
Higgs & Hill	1,950	0	0
Macfarlane	1,775	0	0
Crapper	1,770	0	0
Eldridge	1,757	0	0
Ward, Clack, & Co.	1,730	0	0
Parker	1,700	0	0
Bowyer	1,643	0	0
Holloway	1,575	0	0
J. O. Richardson, Albert Works, Peckham (accepted)	1,562	0	0

LONDON.—For erecting caravan only of new premises in Gray's Inn-road, for Mr. Frederick Sage. Mr. Walter Graves, architect, Winchester House, E.C.:—

Colls & Son	£1,860	0	0
J. Morter	1,803	0	0
Grover & Son	1,794	0	0
Lawrance & Son	1,779	0	0
Patman & Fotheringham	1,779	0	0
C. Brass & Son	1,769	0	0
Fink, Fryer, & Co.	1,747	0	0
B. E. Nightingale	1,720	0	0
Simpson & Co.	1,690	0	0
J. R. Hunt (accepted)	1,646	0	0

LONDON.—For additions, alterations, and fittings in forming premises for the Drapery Exchange, No. 137, Cheapside, and No. 45, Gutter-lane, E.C., for the London and Provincial Drapery Exchange Company. Mr. Walter Graves, architect, Winchester House, E.C.:—

J. R. Hunt	£1,895 0 0
F. Sage & Co	1,570 0 0
J. Mansbridge (accepted)	1,445 5 0
Drew & Cadman	1,438 10 0

LONDON.—For the completion of Nos. 94, 96, 98, and 100, Brondesbury-villas, Kilburn, N.W., under the superintendence of Mr. William Eve, F.S.I., 10, Union-court, Old Broad-street, E.C.:—

	94.	96.	98.	100.
Avis & Son	£495	£495	£495	£495
Barnett	490	490	490	490
Flaxman	480	485	485	480
Weeks	478	478	478	478
Mason	442	442	442	442
Fillbrook	439	445	445	450
Saint	438	438	438	438
Cox	400	400	400	400
Bursell, 16, Wyndham-road, West Hampstead (accepted)	391	391	391	391

LONDON.—For new premises at Brixton, for the Brixton Co-operative Industrial Society, Limited. Mr. Young, architect:—

Walker, Streatham	£1,330 0 0
Bristow, Norwood	1,250 0 0
Candler, Streatham	1,220 0 0
Trigga, Clapham (accepted)	1,148 0 0
Hollingsworth, Peckham	1,128 0 0

LONDON.—For general repairs to six houses in Malham-road, Forest-hill, for Mrs. Thompson. Mr. A. H. Thompson, architect:—

Mitchell, Eltham	£325 0 0
Bowyer, Norwood	289 0 0
Trigga, Clapham (accepted)	264 0 0

LONDON.—For alterations and new shop-front at 301, Edgware-road, for Mr. Jameson. Mr. G. Chuter, architect:—

Shiers	£385 0 0
Wetherilt, Lee, & Marten	338 0 0
Thomerson & Son	312 0 0
Lovel	298 10 0

LONDON.—For building new laundry and works in connexion with machinery at the Licensed Victuallers' Schools, Kennington-lane, S.E. Mr. Geo. Treacher, architect:—

Wythe	£525 0 0
Crabtree	510 5 0
Burman	510 0 0
Walker	491 0 0
W. Smith	482 0 0
B. Cook (accepted)	480 10 0

LONDON.—For erecting two additional stories to 95, Farringdon-street, E.C., for Messrs. Barclay & Sons, Limited. Mr. E. W. Mountford, architect, 22, Buckingham-street, Strand, W.C.:—

Maxwell	£1,398 0 0
Keyes, Head, & Co.	1,359 0 0
Johnson	1,250 0 0
King & Son	1,090 0 0

LONDON.—For painting and decorations at 13, Berkeley-square for Capt. H. C. Denison:—

C. Hindley & Sons (accepted)	£370 0 0

LONDON.—For first section of works at the "Mitre and Dove," Westminster. Mr. Thos. Durrans, architect:—

Bywaters	£3,234 0 0
Ward, Clarke, & Co.	3,097 0 0
Higgs (accepted, by draw)	3,097 0 0

LONDON.—For alterations, &c., to the "Athenæum," Vale of Health, Hampstead, N.W., for Mr. Charles Peters. Mr. Albert E. Pridmore, architect, 2, Broad-street-buildings E.C.:—

W. F. Dabbs, Stamford Hill, accepted at Schedule of Prices.

[No competition.]

LONDON.—For works in rear of "Vale of Health Tavern," Hampstead, N.W., for Mr. Charles Peters. Mr. Albert E. Pridmore, architect, 2, Broad-street-buildings, E.C.:—

W. F. Dabbs, Stamford Hill, accepted at Schedule of Prices.

[No competition.]

LONDON.—For the erection of seven shops and workmen's dwellings in Dawes-road, Walham-green. Messrs. Beazley & Burrowes, architects:—

	Shop-fronts.	Blinds.
Higgs & Hill	£10,864	£730 ... £40
Stanley Bird	10,579	545 ... 39
Boyce	10,267	600 ... 74
Grover & Sons	9,993	528 ... 40
J. & J. Greenwood	9,979	542 ... 40
Colls & Sons	9,863	530 ... 40
B. E. Nightingale	9,643	520 ... 39
Perry & Co.	9,627	498 ... 43
Smith, Son, & Fletcher	9,523	540 ... 130
Simpson & Son	9,494	500 ... 40
Wall Bros.	9,370	498 ... 56

LONDON.—For the erection of ten houses, at Menotti-street and Cheshire-street, Bethnal-green. Messrs. T. & W. Stone, architects:—

Jarvis & Sons	£3,680 0 0
G. W. Beale	3,650 0 0
Knight & Sons	3,477 0 0
Thomerson & Son	3,450 0 0
Edwards	3,363 0 0
Higgs	3,200 0 0
Balaam Bros.	3,140 0 0
Bull & Brown	2,773 0 0

LONDON.—For the completion of No. 45, Salusbury-road, Kilburn, N.W., under the superintendence of Mr. William Eve, F.S.I., 10, Union-court, Old Broad-street, E.C.:—

Clark, 15, Harringay-grove, Hornsey*	£138 15 0

* Accepted.

NEWMARKET.—For the erection of new training establishment at Newmarket, for Mr. M. Dawson. Mr. Jno. Flatman, architect, Newmarket:—

Kerridge & Shaw	£4,484 0 0
Simpson & Son	4,453 0 0
Linzell, Newmarket (accepted)	4,340 0 0
Hunt & Blyth (withdrawn)	3,850 0 0

NEWPORT (Mon.).—For new business premises, 31, 32, and 33, Commercial-street, Newport, Mon., for Mr. J. Liscombe. Messrs. W. G. Habershon & Fawckner, architects, Newport. Quantities by the architect:—

Charles Read, Newport	£4,200 0 0
C. Lock, Newport	3,775 0 0
Moulton & Brownscombe, Newport	3,765 0 0
Henry Parfitt, Pontnewydd	3,730 0 0
W. Jones & Son, Newport	3,725 0 0
Charles Miles, Newport	3,690 0 0
W. Price, Newport	3,618 0 0
J. Linton, Newport	3,600 0 0
W. Blackburn, Newport	3,597 0 0
J. Jenkins, Newport	3,531 0 0
T. Prosser, Newport	3,500 0 0
Alfred Hazel, Newport	3,495 0 0
The Executors of W. Gradwell, Barrow and Newport	3,443 0 0
George Wilkins, Newport (accepted)	3,431 0 0

STRATFORD.—For alterations, &c., at No. 202, The Grove, Stratford, E., for Mr. H. Sanders. Mr. H. Theobald, architect, Leyton House, Goodall-road, Leytonstone, E.:—

A. Reed, Stratford	£679 0 0
Lister & Co., Snow-hill	540 0 0
Bishop & Webb, Stratford (accepted)	487 0 0
Wilson & Co., Stratford	471 0 0

WATFORD (Herts).—For the construction of new roads, sewers, &c., on the Rose and Crown estate, for Mr. F. Fisher. Mr. Charles P. Ayres, surveyor, 52, High-street, Watford:—

Pratt, Watford	£1,494 0 0
Dove, Watford	1,455 0 0
Turner, Watford	1,398 0 0
Hazelgrove, Luton	1,397 0 0
Judge & Eames, Watford	1,366 0 0
Waterman, Watford	1,295 0 0
Pitkin, Watford	1,145 0 0
Capper, St. Albans	965 10 0
Brooks, Hunton Bridge (accepted)	962 2 6

WINCANTON (Somerset).—For new farm-house, garden-walls, fencing, &c., part new farm-buildings, and repairs to old portion, at Rodgrove Farm. For Mr. A. T. Scammell, 106, South Hill Park, Hampstead Heath, N.W. Mr. Stewart, architect:—

Read, Buckhorn Merton	£1,584 10 0
Benjafield, Cheriton	1,579 13 0
Dean, Shaftesbury	1,465 0 0
Samuel Curtis, Stalbridge	1,417 0 0
Richard Curtis, Stalbridge*	1,396 0 0

* Accepted.

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